Lake Water Consumption Summary
The proposed project and its alternatives involve a consumptive water loss from Lake Michigan ranging from 2.5 MGD to 14 MGD. The proposed project would substantially increase the consumptive water use over existing conditions, particularly if the proposed project utilized closed cycle cooling. There is essentially no difference in water consumption among the location alternatives.

The consumptive water use for closed cycle cooling would be somewhere in the range of 1.6 to 7 times the use associated with open cycle cooling, depending on whether the low or high estimate is used for closed cycle cooling demand, and whether evaporative water loss associated with open cycle cooling is factored into the comparison. However, this consumptive water use is not expected to have any significant impacts, given the size of Lake Michigan relative to the water use that would occur.

4.4.6 Water Withdrawal Aquatic Effects - Impingement and Entrainment

Section 316(b) of the Clean Water Act requires that the location, design, construction and capacity of cooling water intake structures be BTA for minimizing adverse environmental impacts. In its Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities (Phase II Rules), USEPA established performance standards for impingement and entrainment as the adverse environmental impacts of concern.

Impingement is defined as the entrapment of any life stages of fish and shellfish on the outer part of an intake structure or against a screening device during periods of intake water withdrawal. (40 CFR § 125.93)

Entrainment is defined as the incorporation of any life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure and into a cooling water system. (40 CFR § 125.93)
FEIS, p. 184

Under the Phase II Rules, the performance standards for facilities with water intakes on the Great Lakes are: 1) an 80 to 95 percent reduction in impingement mortality from the calculation baseline level; and 2) a 60 to 90 percent reduction in entrainment from the calculation baseline level. (WEPCO submittal 9/04) The Applicant calculated the baseline entrainment level using the combined OCPP and ERGS design flow for both the baseline condition and the new offshore intake, which normalizes the calculations for flow. This method of calculating the entrainment reduction allows a direct comparison of the entrainment level of the proposed offshore wedge-wire screen technology to the existing on-shore intake canal. (WEPCO submittal 9/04)

4.4.6.1 Existing conditions

The existing OCPP CWIS (CWIS) is located at the near shore end of a constructed intake channel on the south side of the OCPP coal dock on the bed of Lake Michigan. This intake structure was constructed in 1950. The current system employs bar racks and 3/8-

inch mesh travelling screens to minimize impingement and entrainment. The current structure draws water from the bottom of the intake channel at about 9 feet below the lake surface. Organisms can be impinged first at the bar racks, and then at the traveling screens. (FEIS, p. 193) The OCPP design capacity for the existing intake is 1.27 million gpm, and the current OCPP flow rate is 817,000 gpm. (WEPCO Submittal 7/26/04) Existing calculated intake velocities range from 0.5 to 1.8 fps. (FEIS, p. 208) The OCPP CWIS would continue to operate until it is replaced by the proposed ERGS intake system. (WPDES Fact Sheet)

The estimated entrainment at the existing OCPP intake is 112 million total ichthyoplankton at the current flow rate and 179 million at the design capacity flow rate (WEPCO submittal July 26, 2004)

1975-1976 impingement/entrainment study

The WPDES permit originally issued by the WDNR for the OCPP intake included a requirement to conduct an impingement/entrainment monitoring study to determine the environmental impact of the OCPP's CWIS. The study was conducted from March 1, 1975 to February 29, 1976. During the study period, all eight of the coal-fired units were in operation. Maximum velocities approaching the traveling screens ranged from 1.04 to 1.36 feet per second, depending on lake level. The study assumed that all entrained organisms and impinged fish suffered 100 percent mortality. (FEIS, p. 193)

Impingement sampling was conducted by collecting all fish backwashed off of the traveling screens in the north pump house. The trash rack was not observed to have any impinged fish. The study estimated that 2.8 million fish weighing 109,000 pounds were impinged. Alewife accounted for 78 percent of the catch by number and 89 percent by weight. Smelt accounted for 21 percent and 9 percent by number and weight, respectively. Forage fish added 1 percent and 2 percent by number and weight. Salmonids were negligible. Estimates for the monitoring year projected the impingement of 635 trout and 190 salmon. (FEIS, p. 193)

Entrainment sampling was conducted using plankton nets. Sampling occurred between the trash rack and traveling screens. Sampling was also conducted for larvae and fish eggs in the near shore zone, beyond the influence of the approach channel. The study estimated that 6.2 million fish larvae were entrained during the April-October period. Of these, 17 percent were alewife, 76 percent smelt, and 2 percent were sculpin. Almost 90 percent of the larvae (juveniles) were entrained in August and September, before leaving the near shore zone. Total egg entrainment was projected at 9.3 million, with alewife comprising 98 percent of the total. *Pontoporeia* (now identified as *Dyporeia*) and *Mysis* entrainment was estimated at 12.6 and 3.0 million, respectively. (FEIS, p. 193)

In evaluating the study results, the WDNR compared the impingement and entrainment losses to the sizes and productivity of the affected populations, and concurred with the study conclusion that, relative to the Lake Michigan fishery, the impacts of entrainment and impingement associated with the OCPP were inconsequential to aquatic life in Lake Michigan. (FEIS, p. 193) The WDNR deemed the intake structure as meeting BTA in 1977. (WPDES Fact Sheet)

2002 Ichthyoplankton sampling
The Applicant hired EA Engineering, Science and Technology to conduct ichthyoplankton sampling in 2002, using plankton tows and pumps at various depth contours, water depths and locations. A total of 384 ichthyoplankton collections were made at 14 Lake Michigan locations in the area of the OCPP and proposed ERGS. A total of 18,233 fish eggs and larvae were collected, 15,173 by the netting programs and 3,066 by pumping. The net samples were 79.5% alewife larvae, 14.1% alewife/spottail shiner, and 4.5% yellow perch larvae. The bottom pump samples yielded 53 larvae and 3,013 eggs representing 5 taxa, 2,956 (96.4%) of which were alewife/spottail shiner eggs and 57 (1.9%) of which were trout-perch/common carp eggs. Larval specimens were dominated by mottled/slimy sculpin and alewife. (FEIS, p. 190)

4.4.6.2 No Action Alternative

Under the no action alternative, the existing intake structure would have to comply with the new 316(b) phase II rules to reduce impingement by 80% and to reduce entrainment by 60%. The Sargent and Lundy report prepared for the Applicant identified a number of measures that could be taken to bring the existing intake into compliance with the phase II rules.

4.4.6.3 Proposed Project and Location Alternatives, Open Cycle Cooling

For the proposed project and its location alternatives, the cooling water intake structure would be modified from its current onshore open channel design to a submerged offshore intake. The principal advantage to the offshore location is that the point of water withdrawal would be located in an area of the lake that is less biologically productive than the current onshore location. The WATER Institute, a consultant for the Applicant, determined that the proposed intake location appears to be ideally situated in a region of open sand and at a depth of 43 feet (WATER Institute 2003). The offshore intake is expected to achieve nearly a 100% reduction in impingement and roughly a 70% reduction in entrainment, when normalized for flow (WEPCO submittal 9/04).

Impingement
To meet the USEPA impingement mortality reduction standard (40 CFR § 125.94(a)(1)(ii)), the Applicant proposes to install an intake structure with cylindrical wedge-wire screens with a maximum through slot velocity of 0.5 feet per second (fps). In addition to maintaining this through-screen velocity, cylindrical wedge-wire screens would be the physical barriers used to effectively eliminate impingement. (WEPCO submittal 9/04)

Entrainment
The proposed ERGS would meet the USEPA required 60-90% entrainment reduction standard by relocating the existing intake to an off-shore location in 43 feet of water, where the density of fish and shellfish that could be entrained has been shown to be considerably less than it is near the existing on-shore open channel intake. (WEPCO submittal, 7/26/04 & 12/7/04) The WPDES permit requires that the intake be located at

approximately 42° 50' 38" latitude and 87° 47' 55" longitude, approximately 7,900 feet from the shoreline of the lake, and at a water depth (longitudinal axis of the screens) of approximately 35 feet below the Lake Michigan low water datum. (Final WPDES permit, 3/30/05).

The proposed combined flow for the OCPP and ERGS is 1.56 million gpm. This flow rate would be 1.2 times greater than the existing OCPP design capacity flow rate and 1.9 times greater than the current OCPP flow rate. It is anticipated that most organisms entrained into the proposed system would not survive. The estimated entrainment that would occur at the proposed ERGS intake is 25.8 million total ichthyoplankton at the combined ERGS-OCPP flow rate. (WEPCO submittal July 26, 2004) This is a 77% reduction in entrainment compared to the existing estimated entrainment level of 112 million, and an 86% reduction in entrainment if compared to the estimated entrainment level of 179 million if the existing OCPP were operated at its design flow rate. When the estimates are normalized for flow, meaning they are adjusted to an equivalent flow rate for the existing and proposed intake, the reduction in entrainment is estimated to be 70%.

Backup Intake

According to the Applicant (WEPCO submittal 2/25/05), the existing intake channel south of the coal dock would be modified to create a back-up surface water intake that could be used to supply cooling water to both the OCPP and ERGS units. The west end of the intake channel would be closed off by a permanent cofferdam containing bar screens and multiple stop gates to create a new intake bay. The intake bay would be divided by a sheet pile wall to create two individual forebays. A new booster pump station would be installed between the north and south forebays.

This backup intake would be placed into service in the event that the offshore wedge-wire screens are out of service due to clogging caused by icing or debris. The formation of frazil ice and presence of aquatic vegetation could contribute to blinding or blockage of the wedge-wires screens that may lead to the use of the back-up intake. The Applicant estimated that frazil ice formation could occur one or two times annually, amounting to an estimated 0.55% of intake operating time annually. (WEPCO 9/04 316(b) technical support document, p. 3-3 to 3-5)

The Applicant intends to handle the build-up of aquatic vegetation and partial blockage of wedge-wire screens with regular biannual cleanings by divers. It is expected that screen cleaning can be accomplished safely during normal intake operations, without taking the proposed intake out of service. If the screens become blocked by vegetation to the point that they cannot be operated, the Applicant estimates that the back-up water intake would be in service for a 10 day period while the screens are cleaned, amounting to 2.75% of intake operating time annually. (WEPCO 9/04 316(b) technical support document, p. 3-3 to 3-5).

The impact of operating the backup intake structure due to frazil events is expected to be minimal because the potential for larval fish in the area would be very low. In addition, the impact of operating the backup intake structure due to vegetation blockage is expected to be minimal because it is most likely to occur in the fall when the larval fish density is very low, based on the results of 2002-2003 fisheries surveys at the existing intake. (WEPCO 9/04 316(b) technical support document, p. 3-3 to 3-5).

The Applicant expects to comply with the 80% impingement mortality reduction performance standard on an annual basis, based on back-up intake operation 3.3% of the time, and based upon backup intake operations not occurring during periods of peak impingement. The Applicant does not plan any additional controls for impingement mortality and entrainment reduction for the back-up intake. (WEPCO 9/04 316(b) technical support document, p. 3-3 to 3-5).

The Applicant's WPDES permit, issued March 30, 2005, authorizes the Applicant to construct the emergency cooling water intake structure at the intake channel, for use only when the intake screens in the offshore intake structure are inoperable due to clogging by frazil ice or other debris, and its limits use to not more than 3.3% of the time during any 12-month period. (Final WPDES permit, 3/30/05)

Impacts on Diporeia Populations

Diporeia is an important organism for fish forage that lives primarily in silty-sand/mud substrates and is more predominant in deeper waters (i.e., 20 meters or greater in depth). Scientific research has identified a substantial decline in diporeia populations in Lake Michigan in recent years. The exact cause of the decline is unknown although increases in the number of zebra mussels in the lake may play an important role. In their WPDES permit evaluation for the proposed project, the WDNR determined that the proposed CWIS for ERGS would not substantially affect Diporeia populations. (WPDES Fact Sheet, p. 19)

Impacts on Yellow Perch

Yellow perch have also experienced major population declines in the past several years. Concerns for yellow perch related to the proposed project include the reduction of the yellow perch food base due to entrainment, entrainment of yellow perch larvae during the period shortly after hatching, and loss of yellow perch eggs due to spawning on the intake structure.

The WDNR determined in their WPDES permit evaluation for the proposed project that, given the distance between the proposed CWIS and prime habitat, and the natural replenishment of fish food organisms, it is not likely that yellow perch populations would be significantly impacted by the proposed project.

Overall, based on their expert opinion and knowledge of the dynamics of the biological resources of Lake Michigan, the WDNR has determined that the impact of entrainment on the overall biology of the Lake would not be adversely affected by the proposed intake. (WPDES Permit, p. 18)

4.4.6.4 Proposed Project and Location Alternatives, Closed Cycle Cooling

A closed cycle cooling system would meet the USEPA Phase II rule impingement mortality reduction standard. The Applicant indicated that impingement effects should be comparable to the proposed open cycle cooling system that employs wedge-wire screens with a maximum through-slot velocity of 0.5 fps. In that case, impingement effects associated with closed cycle cooling should be negligible.

The intake withdrawal rate for a closed cycle system is estimated to be 3% of the open cycle flow rate. If a closed cycle system were used at ERGS, it would not be necessary to relocate the existing near-shore intake to an offshore location to meet the Phase II Rules requirements. Fisheries sampling work conducted in 2002-03 demonstrates that near-shore densities are about 5 to 10 times higher than the ichthyoplankton densities at the proposed offshore intake location. Therefore, although the flow rate would be lower with a closed cycle system, the near-shore density of organisms that could potentially be entrained would be greater compared to an open cycle system.

Based on these assumptions regarding flow rate and density of total ichthyoplankton, an intake used to supply a closed cycle cooling system would have an entrainment level of about 15% to 30% of the proposed ERGS off-shore intake for an open cycle system. (WEPCO Submittal, 12/7/04) Based on the estimated entrainment level of 25.8 million ichthyoplankton for the proposed project with open cycle cooling, the proposed project with closed cycle cooling would entrain an estimated 3.9 to 7.7 million ichthyoplankton.

4.4.6.5 Indirect and Cumulative impacts

The proposed project and its alternatives would reduce impingement and entrainment levels as compared to existing conditions. Consequently, the project is not expected to have a significant cumulative effect.

4.4.6.6 Mitigation and Monitoring

The WPDES permit requires the Applicant to submit a report by December 31, 2005 on additional investigations to demonstrate attainment of the entrainment performance standards. The additional investigations and demonstrations include the following:

1) Evaluate and quantify the impact on entrainment when all shellfish organisms are included in the entrainment calculation. The organism Diporeia must be included in this calculation. The Applicant may propose Diporeia as a representative species for shellfish.
2) Evaluate the potential of the cooling water intake structure to attract fish for purposes of spawning.
3) Quantify the impact on entrainment that may result from fish using the cooling water intake structure and all its components as spawning habitat. This evaluation shall include impacts on yellow perch and any other species, as appropriate.

4) Quantify and revise, as necessary, the entrainment reduction projections for the proposed new cooling water intake structure based on the results of the investigations required by this item of the permit.

Impingement and Entrainment Summary
The proposed project and its alternatives would substantially reduce impingement and entrainment impacts as compared to existing conditions. The proposed project with open cycle cooling would essentially eliminate impingement impacts, as compared to an anticipated 80% reduction in impingement impacts with closed cycle cooling. Entrainment would be reduced by 70%, after normalization of flows, if the proposed project were implemented with open cycle cooling. In comparison, the Applicant estimated that entrainment resulting from the proposed project with closed cycle cooling would be 70% to 85% less than the proposed project with open cycle cooling.

Based on their ability to meet 316(b) requirements for the reduction of impingement and entrainment, the proposed project and its alternatives would be an improvement over existing conditions and would not be expected to have a significant adverse impact on aquatic resources due to impingement or entrainment.

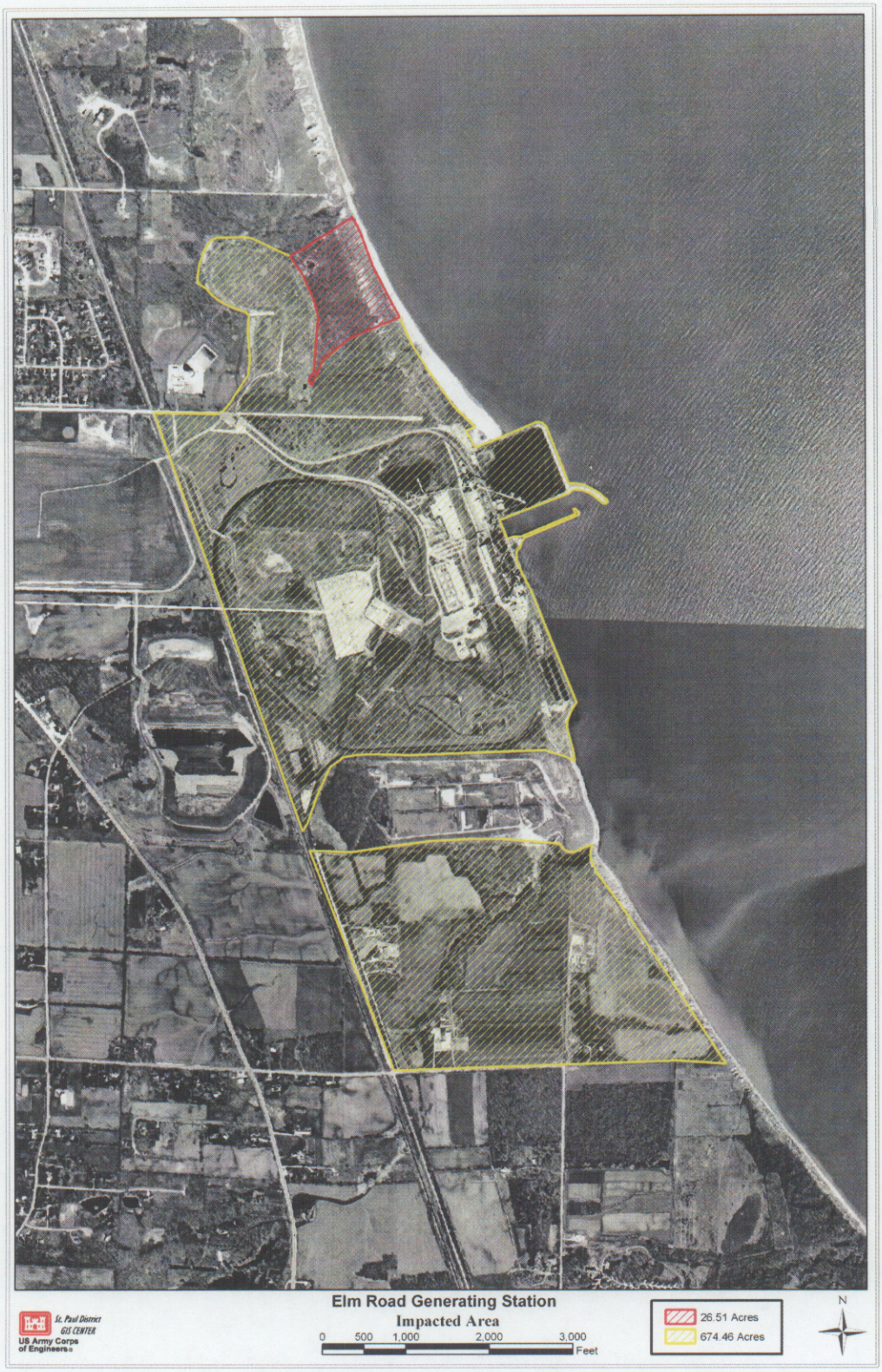
4.5 Construction Impacts

The majority of the potential natural resource impacts due to construction of the proposed project are addressed in the applicable resource impact sections. This section is focused on construction-related impacts of odors, noise, fugitive dust, erosion and sediment control, and traffic levels resulting from site preparation and facilities construction. Waste materials resulting from construction activities are addressed in the Solid/Hazardous Waste Section of this document. The expected construction period is six years, and several of the construction-related impacts would affect the surrounding communities during this time. (FEIS, p. 300)

The area within which construction disturbance would occur for the proposed project is shown on Figure 4.5-1. The area of disturbance is estimated to be 675 acres. Among the location alternatives, there would be minimal differences in the area within which construction disturbance would occur. However, the proposed project with closed cycle cooling would be expected to have a larger disturbance area, due to the larger footprint of the project, and is estimated at 702 acres. The estimated additional area is identified in Figure 4.5-1.

Site Excavation
5.8 or 7.3 million cubic yards of soil would be excavated to construct the proposed project at the Caledonia site or North site, respectively. Soil is proposed to be stockpiled at various locations on OCPP property to create berms for visual screening and noise attenuation (FEIS, p. xxvi)

Figure 4.5-1. Estimated Area of Construction Disturbance



4.5.1 **Fugitive Dust.**

As discussed in the Air Quality Section, air emissions during the construction phase would primarily be total suspended particulate (TSP), in the form of fugitive dust emissions, due to excavation, hauling, loading, and dumping, and grading activities. Potential dust resulting from construction activities and track traffic would be controlled by following standard practices during construction, such as watering exposed surfaces, reduced speed limits on the site, and limiting construction activities during high wind conditions

The WDNR air pollution permit established fugitive dust control requirements for the proposed project, which would generally apply to any of the location alternatives. The WDNR expects that adherence to the applicable dust control requirements would result in no significant impacts to local air quality from the proposed construction. (FEIS, p. 168)

Fugitive dust, or blowing dust, is the particulate matter that could be blown away from the project site into neighboring areas, which can cover houses, snow, clothes hung outside, lawn furniture, and vehicles with dust. There are concerns with the effect of this dust on people and property near the proposed project. Coal dust is a concern, but in the Oak Creek area a number of factors such as farm fields, mold, and particulates from vehicle traffic or nearby urban areas contribute to area dust. (FEIS, p. 309)

The greatest potential for blowing dust would occur during the construction period, due to the extensive earth moving activities associated with the proposed project. It is anticipated that the Applicant would keep all excavated soil on-site due to the relatively short construction period allotted for earthwork. Moving these large amounts of soil from the area of bowl excavation near the lakeshore to the different soil deposition areas on-site could cause substantial wind-blown soil during dry, windy conditions.

Mitigation Measures
Possible methods for controlling dust from construction traffic include wet suppression, control of vehicle speeds, sealants, and the paving and maintenance of roadways. In addition, the Applicants plan to continue using water spray trucks for on-site roads.

4.5.2 Construction Noise

Sources of construction noise include increased traffic to and from the construction site and operation of construction machinery at the site.

Individual Equipment Noise
Construction noise is typically high intensity and intermittent. It can also be impulsive: impulsive high intensity sounds are noticeable especially when they are introduced into residential settings. The primary noise sources at a construction site are likely to be the diesel engine drive systems that power most construction equipment. The work schedule would most likely require six-day workweeks with work continuing 10 to 16 hours per day. This would suggest that noise impacts could continue into the evening hours and extend into the weekend. Typical construction noises, modeled for a power plant project

in southeastern Wisconsin, are listed in Table 4.5.2-1. Some noises during construction could be very loud, ranging from 120-134 dBA at 50 feet from the source, occurring during short-term steam or air blows. (FEIS, p. 336)

Table 4.5.2-1
Estimated maximum noise levels for typical construction equipment

Construction Equipment Maximum Noise Level	Typical Range at 50 Feet (dBA)
Steam blow off (4-8-inch line)	124-134
Air blow off (4-8-inch line)	120-130
Blasting	93-94
Dozer (250-700 horsepower)	85-90
Front end loader (6-15 cubic yards)	86-90
Trucks (200-400 horsepower)	84-87
Grader (13-16-foot blade)	83-86
Shovels (2-5 cubic yards)	82-86
Portable generators (50-200 kW)	81-87
Derrick crane (11-20 tons)	82-83
Mobile cranes (11-20 tons)	82-83
Concrete pumps (3-150 cubic yards)	78-84
Tractor (3/4 to 2 cubic yards)	77-82
Unquieted paving breaker	75-85
Quieted paving breaker	69-77
Source: FEIS Table 11-26	

Noise from the construction of the generation buildings and units themselves would be reduced considerably because the SCPC units would be constructed in an excavated depression facing the lake. This is also true for the alternatives to the proposed project. It is estimated that it would take four years to build the first SCPC unit. The closest residences to the North Site are about one-half mile from the SCPC unit construction site. General construction noise at the North Site would primarily affect residences located along and near Elm Road.

Other construction noise sources that are likely to be noticeable to residences north of Elm Road would be from the construction of the coal handling facility and from activity at the spoil fill sites north and west of the North Site. Residences near these areas would be affected regardless of which site was selected. The Applicant expects that it would take approximately 3 and a half years to complete the coal handling facility.

For the Caledonia Site, construction of the SCPC units would take place at a considerable distance from the residences along Elm Road. The closest residences are between 0.5 and 0.75 mile south and west of the proposed plant.

Both the distance to sensitive receptors and construction inside the excavated site would serve to reduce noise impact to the closest sensitive receptor.

New railroad construction
Extensive upgrades to the existing rail system would be required not only on the plant property but along the existing rail line south of the Applicant's property. From the new rail loop south to Five Mile Road, from one to four sets of new track would be added alongside the existing tracks. This would increase construction noise disturbance in the immediate vicinity of the rail construction area. The upgrades to the rail system would take approximately 34 months to complete. The hours of construction are dictated by the CUPs that have been developed with Oak Creek and Racine County. The type of work would most likely require the use of earthmoving equipment to properly prepare and grade new rail beds. Heavy equipment would also be used to deliver and install new track.

Construction noise would be similar to that described for other phases of this project. Limiting construction to weekdays and daytime hours would serve to reduce, to some extent, the overall annoyance associated with noise from rail construction. Homes along the railroad right of way would be most affected by this construction activity.

Earth moving
As proposed, an enormous amount of soil would need to be excavated in order to begin construction of the first SCPC unit. The total amount of excavation required for this project ranges from 5.5 to 10 million cubic yards of soil depending on the alternative selected. This type of soil excavation would require the use of very large earth moving equipment. Noise levels associated with this kind of machinery are likely to be fairly intense with a predominant low frequency component.

Low frequency sounds have longer wavelengths and tend to travel further than high frequency short-wavelength sounds. The noise from the excavation site would be mitigated, to some extent, by the distance to the nearest sensitive receptors, which is about 3,400 feet for the North Site and about 3,000 feet from the Caledonia Site. In addition, as excavation proceeds, much of the work would take place below grade so that the noise produced would radiate east onto the lake rather than to the west and south where residences are located.

Excavated soil must be transported from the building site to the disposal site. A total of five on-site soil disposal areas would be utilized. Regardless of the site selected for the new units, at least two soil disposal sites would be located near a relatively dense residential area located north of Elm Road and east of STH 32 (near the Barton Oaks Subdivision).

One soil disposal site, the South Ash Landfill, is located just south of Elm Road in an area that has been used for ash disposal adjacent to Haas Park. The northern edge of this disposal site is about 700 feet from residences north of Elm Road. It is estimated that approximately 3.3 million cubic yards of earth would be placed at this location alone. The other disposal site is located northeast of Elm Road and is about 1,800 feet from the same residential area. Between 0.5 and 1 million cubic yards of fill would be placed at this site.

The Applicant has estimated that all earthmoving activities would require about one year to complete. The Applicant intends to use between 30 and 35 large earthmoving vehicles during the mass excavation phase of the project. Caterpillar 631 G scrapers and/or 769D mining trucks with a rated capacity of approximately 31 cubic yards or similar machinery would be used. For the mass excavation operation the Applicants plan to use a six-day workweek with two 10-hour shifts per day. The nominal number of vehicle round trips per day is estimated at about 1,400.
(FEIS, p. 338)

Once soil is deposited at the site, heavy earthmoving equipment must be used to spread the soil. In terms of elevation, the disposal site is above the residences to the north. There would be little to shield or block the noise from either disposal site. Over time, the deposited soil would rise approximately 45 to 50 feet above the level of Elm Road. With little to block the sound of heavy equipment, it is likely that the increase in noise from construction would be quite noticeable. Some reduction in noise impact could be achieved by first placing fill on the outside edges of the fill site to form a level of berm. Then fill could be brought in behind the newly created berm. Because of the amount of soil and the size of the disposal sites, this approach could only be done in stages. This could reduce some of the noise created while filling in behind the raised edge. (FEIS, p. 339)

Screening berms are most effective in reducing high frequency (short wavelength) noise. Berms are less effective in blocking long wavelength (low frequency) sound. Noise impacts created during the earthmoving could also be reduced by limiting earth-moving activities to five days a week between 7:00 am and 5:30 pm. The CUPs with Oak Creek and Racine County set noise limits for the construction and earthmoving phases of the project. However, the limits defined in the CUP are dBA sound levels. A major portion of the sound spectrum created by construction and earthmoving activities would be in the low frequency range. The A weighting curve deemphasizes low frequency sound. (FEIS, p.339)

Traffic noise
Increases in truck traffic along the roads leading to and from the proposed project site would contribute to construction noise. STH 32 and Elm Road are likely to have substantially more heavy truck traffic. Traffic increases would be sustained over a period of at least five years. For one SCPC unit, the construction period would last about five years and the traffic would increase by about 1,040 vehicle trips per day. It is unclear at this time how traffic would approach the project. At present, plans include new access to the plant at the north end of the project site. Oakwood Road would be extended east into the project property. (FEIS, p. 337)

4.5.3 Erosion and Sediment Control

Wisconsin NR 216 rules require that a Storm Water Pollution Prevention Plan (SWPPP) be in place before commencement of construction activities that result in the disturbance of 5 acres or more of land and the operations phase of the proposed plants. The quality of storm water discharged from the proposed project would be addressed through the

development and implementation of site-specific construction site erosion control and post-construction storm water management plans. State and local regulations establish the design criteria, standards and specifications used to develop and implement these plans. State regulations require the erosion control plan to be designed to achieve an 80 percent reduction of the sediment load that would be discharged from the construction site if no sediment or erosion controls were in place. (FEIS, p. 221)

Differences in alternatives
The proposed project and location alternatives would have similar construction site erosion and sediment control. The actual location of the measures on the project site would vary depending on the location alternative, but the treatment objective would be the same. Because the city of Oak Creek recently adopted a storm water ordinance requiring storm water discharge quantity control for the proposed project that is more prescriptive than state requirements, wet detention basins for the North Site CUP and North Site alternatives could be larger than wet detention basins for the Caledonia Site.

Mitigation
All soil stockpiles must be addressed in the erosion control plan, including practices that would be used to minimize the impacts of trucks used to haul the excavated material (e.g., dust, sediment tracked on public roads). (FEIS, p. 223)

To achieve the 80 percent sediment reduction requirement in the storm water permit, the following elements would be implemented for the proposed project before land disturbing activities begin:

• As much of the construction site as possible would drain to sediment basins during all phases of construction. Changes in site topography and drainage patterns that would occur over time would be considered when determining the specific location of sediment basins. In addition, temporary diversion berms/swales may be used to ensure that sediment basins are not bypassed.
• Construction sequencing would be implemented to minimize the length and duration of soil disturbance and exposure in any one area.
• The area of bare soil exposed at *any* one time would be minimized. Any disturbed areas left inactive for seven days would be temporarily or permanently stabilized by seeding, mulching, erosion matting or other equivalent stabilization practices.

4.5.4 Construction Traffic

For the proposed project and location alternatives, all construction traffic would use one of two proposed new access roads off of STH 32, near County Line Road, when entering or exiting the site. Construction traffic is likely to enter the area by way of Interstate 94 (1-94), and travel east to the site. STH 100, north of the OCPP property, and Seven Mile Road, south of the OCPP property, are the most likely I-94 exits that would be used, due to the location of the site access road. (FEIS, p. 321)

The PSCW construction traffic forecast used a conservative assumption that all supplies would be delivered by truck and that no car-pooling would occur. Actual vehicle traffic

to and from the site would vary, due to varying construction activities over the construction period. During the construction period for the first SCPC unit, vehicle traffic would increase by about 1,840 vehicle trips per day. During the period of time when both the first and second SCPC units would be under construction, about half of the total construction period, vehicle traffic is estimated to increase on average by 3,680 vehicle trips per day. It is expected that there would be half the number of vehicles at the site as the number of vehicle trips, which count vehicles both entering and leaving the site. (FEIS, p.317)

Increased traffic on STH 32 due to construction vehicles
For this evaluation, it was assumed that half of the construction traffic would approach the project site entrance from the north and half from the south, and an average of the available annual average daily traffic (AADT) counts on STH 32 north and south of the site entrance was used. Based on these assumptions, traffic on STH 32 north and south of the site entrance would increase by 1,040 AADT to 2,780 AADT, respectively.

These forecasted traffic increases represent roughly a 5 to 15% increase over baseline traffic levels. This increase is not expected to have a significant affect on local traffic.

Mitigation Measures and Monitoring
The Oak Creek CUP and the Racine/Caledonia CUP both impose limitations on the operating hours and noise levels for construction, excavation, earthmoving, hauling of dredged material, grading and landscaping activities associated with the proposed project. In addition, both CUPs require that construction noise mitigation measures be accomplished via a muffler inspection program for all heavy construction vehicles.

Construction Impacts Summary
This proposed project and its alternatives would have similar construction-related impacts. Construction noise, fugitive dust, and erosion and sedimentation would be limited and monitored by the conditions of the Conditional Use Permits (CUPs) that have been issued to the Applicant by Racine/Caledonia and the City of Oak Creek. The CUPs conditions would also minimize impacts of construction traffic shift changes, and the predicted traffic level increases of 5 to 15% over baseline levels are not expected to have a significant affect on local traffic.

4.6 Floodplain Impacts

4.6.1 Existing Conditions

The land designated for the additional generating units at the North sites and the Caledonia site are bluffs approximately 100 feet above the Lake Michigan shore. Further inland there is a gradual increase in elevation towards the switchyard, rail tracks, and coal storage areas. The majority of the OCPP site drains to Lake Michigan via small unnamed tributaries or through engineered drainage systems designed to capture and treat storm water runoff from the industrial portion of the site prior to discharging into Lake Michigan. The western portion of the site near and adjacent to STH 32 drains into an unnamed tributary to the Root River. The floodplains of these unnamed tributaries are

small and the watersheds largely undeveloped with a relatively small percentage of impervious surfaces. Other than the shoreline of Lake Michigan, there are no areas of the site that would be at risk for flooding or that are designated floodways or floodplains.

4.6.2 Proposed Project and Alternatives

None of the alternatives considered would have an adverse effect on flooding either on the OCPP property itself or in any offsite areas. While the construction of additional generating units would substantially alter the topography of the OCPP site, the effects of these changes would largely be contained within the OCPP property. The changes in surface water drainage would be limited primarily to areas that drain directly to Lake Michigan. Any changes in discharge rates and/or velocities would not result in flooding that would affect any adjacent properties or downstream users. In addition, the Applicant would be required to prepare and comply with a storm water management plan that would be approved by the WDNR. These plans typically require storm water to be controlled and treated prior to discharging into public waters.

The Applicant is also required to demonstrate that any new culverts or the replacement of existing culverts does not result in an increase in upstream water surface elevations during the 10-year, 24-hour storm. The Applicant has submitted these calculations to the WDNR, and by issuance of the Chapter 30 permit, has complied with the state requirement.

4.6.3 Indirect and Cumulative Impacts

The location of the proposed project adjacent to Lake Michigan reduces the potential for any adverse cumulative effects to floodplains or from flooding impacts on adjacent or downstream users. Direct floodplain impacts outside of the area that drains directly to Lake Michigan would be limited to culvert replacements and relatively minor grading for infrastructure improvements. These areas would be subject to local and state requirements for storm water management and would not be expected to create a new flooding problem or contribute to an ongoing problem.

4.6.4 Mitigation

Implementation of construction best management practices and observance of buffers along stream channels would reduce potential adverse effects to the floodplains of the small streams on the property.

Floodplain Impacts Summary
The direct, indirect, and cumulative effects to floodplains would be negligible for any of the reasonable alternatives.

4.7 Groundwater

4.7.1 Groundwater Hydrology

Two groundwater systems are present in southeastern Wisconsin, a shallow "water table" system, comprised of the unconsolidated glacial deposits and the bedrock (Silurian dolomite above the Maquoketa Shale), and a deeper confined system consisting of the bedrock below the Maquoketa Shale. Throughout Southeastern Wisconsin the glacial deposits are hydrologically connected with the Silurian bedrock and are generally considered a single hydrologic unit. However, in areas where the glacial deposits are impermeable tills, water in the shallow aquifer may be under semi-confined conditions.

Within the shallow groundwater system, sand and gravel deposits occurring in moraines, outwash plains and beach deposits, supply considerable sources of water. The Silurian dolomite (also referred to as the Niagra Aquifer), is also a source of groundwater in the shallow system. Most private and community supply wells in the vicinity of the Oak Creek property derive drinking supplies from the Silurian dolomite. Typical wells are about 200 feet deep and are constructed by drilling a borehole about 20 feet into the dolomite and installing a well casing from the ground surface to the bedrock surface.

A review of available well records of wells within a one-mile radius of the Oak Creek property indicated that of 91 private/community wells, 84 of the wells (92 percent) were installed in the bedrock. The other seven wells were installed in sand or sand and gravel deposits within the Oak Creek Formation. Of these seven wells, three are installed in sand or sand and gravel deposits between and 50 and 60 feet below ground surface (bgs). All three of these wells are located more than 1,200 feet from the Oak Creek property. The other four wells are screened in sand and gravel deposits, which overlie the bedrock. One of these wells is located approximately 1,000 feet northwest of SOC.

Recharge to the shallow system is through precipitation. Recharge to the Silurian dolomite is from downward seepage through the glacial deposits. The most permeable glacial deposits are in the western portion of Racine and Kenosha Counties where most of the dolomite occurs.

In glaciated terrains, shallow groundwater drainage basins generally are coincident with surface water drainage basins. Groundwater movement in the shallow system, within the Lake Michigan drainage basin is generally west to east, towards Lake Michigan, with some discharge to streams and wetlands. Some recharge is induced from Lake Michigan, when water levels in the shallow aquifer near the lake are below lake level. Shallow groundwater flow within the Root River drainage basin is generally westerly, towards the Root River.

The deeper aquifer underlying southeastern Wisconsin is comprised predominantly of sandstone units between the Maquoketa Shale and the Precambrian "basement" rocks.

The St. Peter Sandstone and the Cambrian sandstones supply most of the water supplies from the deep aquifer.

Recharge to the deeper aquifer is primarily through lateral movement of water from areas to the west where the sandstones are closer to the ground surface or are exposed. A small amount of water recharges the deeper aquifer through wells that are open to both the Silurian dolomite and the sandstones of the deeper aquifer. Because the water levels in the shallow aquifer are higher than those in the sandstone, the water moves downward. The groundwater basin of the deeper aquifer system does not correspond to surface water drainage basins. In the past, movement of groundwater in the deeper system was controlled in a large part by heavy pumping in the Milwaukee and Chicago areas, but recent studies indicate that pumping influence have decreased due to increasing use of water from Lake Michigan (from NR 140 Groundwater Investigation – Oak Creek Property, 1993).

4.7.1.1 No Action Alternative

The No Action alternative would not affect groundwater hydrology at the site.

4.7.1.2 North Site CUP, North Site, and Caledonia Alternatives

Construction of any of the project alternatives would result in the excavation of a large bowl adjacent to Lake Michigan on either the north or south side of the OCPP. The excavation would intercept the shallow groundwater aquifer at the site prior to discharging into Lake Michigan. Since the movement of groundwater at the site of the bowl excavations is to the east towards the lake, this interception of flow should not have an adverse effect on groundwater supply to any residential or commercial wells. The excavation also would not significantly change the direction of flow in the vicinity of the OCPP.

4.7.2 Groundwater Quality

Groundwater in the Oak Creek Formation is generally of the Mg $Mg(HCO_3)_2$ and Na_2SO_4 and Na_2SO_4 type (Simpkins, 1989). Groundwater chemistry evolves with depth within the formation from the $Mg(HCO_3)_2$ to the Na_2SO_4. Concentrations of Ca, Mg and HCO_3 are highest in the upper portion of the formation because of dolomite and calcite dissolution by carbonic acid and acid produced from inorganic sulfide oxidation. The oxidation of inorganic sulfides can cause locally high concentrations of sulfate and iron in the shallow ground water.

Water in the sandstone, dolomite and sand and gravel aquifers are predominantly $CaMg(Mg(HCO_3)_2$ (Hutchinson, 1970). Water in these units typically contains high concentrations of dissolved solids (hardness) and iron.

The Applicant is required under state law to conduct monitoring at the OCPP to assess the potential for groundwater contamination from its closed landfills. The analysis of

samples collected from monitoring well MW-33, south of the North Oak Creek landfill, showed elevated concentrations of ash parameters boron and sulfate. Elevated boron concentrations were also observed for monitoring well B-31 located east of the landfill. Currently, the situation is being monitored to identify any corrective actions that may be required.

4.7.2.1 No Action Alternative

The No Action alternative would not affect groundwater quality at the site. However, the Applicant has indicated that certain remedial measures could be performed in conjunction with construction of additional generating units at the site. These measures would reduce the potential for additional groundwater contamination from the closed landfills and would be considered a beneficial effect. Under the No Action alternative, these measures would not be implemented and conditions would remain as they exist today.

4.7.2.2 North Site CUP, North Site, and Caledonia Alternatives

Construction of any of the reasonable alternatives would result in excavation, and considerable land disturbance at the OCPP property. These activities are not anticipated to have any adverse effects on groundwater quality unless they result in modifications to the on-site landfills that would release leachate into the groundwater. To safeguard against this possibility, the Applicant would be required to submit plan modifications to the WDNR prior to the onset of construction.

The Applicant would be required to ensure that there would be no adverse effects from the proposed modifications and conduct verification monitoring. The increased use of other hazardous wastes at the site also presents a possible source of groundwater contamination from any of the project alternatives. Providing containment devices and preparing spill prevention and emergency response plans would minimize the risk from the storage and use of these chemicals on-site. As a result, the potential for adverse effects to groundwater from the project would be minimized and not considered adverse.

4.7.2.3 Indirect and Cumulative Impacts

The proposed project and reasonable alternatives would not contribute to or exacerbate an existing groundwater concern at the OCPP. A potential beneficial effect of the proposed project would be the implementation of remedial measures to reduce the potential for additional groundwater contamination from the closed landfills.

4.7.2.4 Mitigation

No mitigation measures have been identified.

Groundwater Impacts Summary
Adverse effects to groundwater from any of the reasonable alternatives are expected to be negligible and would not have any effect outside of the OCPP property.

4.8 Historical/Archaeological Resources

4.8.1 Existing Conditions

The Corps' permit review must consider the effects of authorizing any work, or structure, in waters of the U.S., which is considered to be the Corps' undertaking, on historic properties, as well as properties that may be of cultural, religious, or historic importance to any group of people. This is commonly referred to as a cultural resource review. The statutory responsibility for the cultural resource review is primarily Section 106 of the National Historic Preservation Act; however, federal agencies have responsibilities under a myriad of laws, regulations, and executive orders.

The implementation of Section 106 by the Corps' Regulatory Program follows the provisions found in two sets of regulations. The Advisory Council on Historic Preservation's regulations found at 36 CFR Part 800 and the U.S. Army Corps of Engineer's regulations found at 33 CFR Part 325 Appendix "C". During the Section 106 review, historic properties are identified and the effects of the undertaking on those properties are assessed. If the effects are considered to be adverse, they are avoided, minimized, or mitigated.

The term "area of potential effects" (APE) is defined in Part 800.16(d). The APE for an undertaking is the geographic area, or areas, within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. The APE essentially defines the scope of efforts to identify potential historic properties and evaluate their eligibility for listing on the National Register of Historic Places (NRHP). Simply stated, a historic property is any district, site, building, structure, or object, commonly referred to as a cultural resource, which meets the criteria for listing on the NRHP or is listed on the NRHP.

The St. Paul District, Corps of Engineers defined the APE for the proposed ERGS and outlined the requirements for identification and evaluation of historic properties. That information was provided to the Applicant in a letter dated June 29, 2004. A copy of the letter was sent to the WSHPO.

The core of the APE is composed of those areas where ground-disturbing activities are planned, because those activities would affect all property types whether the property is an archaeological site or historic structure. The core APE would include wetland mitigation sites, building sites, access roads, berms, ash disposal areas, or other project features that require earthmoving or disposal activities.

Outside the core APE is a secondary area affected by visual, atmospheric, or audible elements produced by the project features constructed in the core area. In this area, properties that are important for their setting may be affected. Those property types are most likely historic buildings, structures or traditional cultural properties. The secondary APE was defined as an area extending a half-mile beyond the Applicant's property

boundary and is roughly defined by Lake Michigan to the east, 10th Avenue to the west, Fitzsimmons Road to the north, and on the south, a point that is about one-half to three-quarters of a mile south of Seven Mile Road.

The potential for audible or visual elements that may affect historic properties is probably low. The local landscape has little remaining integrity due to the existing power plant and ongoing development in adjacent areas. Noise levels with this type of installation are relatively low, except perhaps during construction. The two exhaust stacks, approximately 550 feet in height, pose the greatest visual effect, because the visual effects from other project features are for the most part screened by adjacent wooded areas.

The identification effort included both archaeological surveys and an architectural survey in the core APE and only architectural survey in the secondary APE. The identification efforts are discussed in more detail in the following sections.

4.8.2 Archaeological Investigations

Archaeological investigations at the OCPP site were conducted in the mid-1980s by Great Lakes Archaeological Research Center, Inc. (GLARC) (Overstreet 1985 and 1986) and were continued in 2004, for the Elm Road Power Station by GLARC and AVD Archaeological Services, Inc. (AVD) (Watson 2004a and 2004b; Van Dyke 204a and 2004b). Prior to these surveys, collector interviews identified one archaeological site 47-MI-366 (Richards 1984), but the site was never field verified by an archaeologist. The following is a brief summary of the archaeological investigations and their results.

In 1985, GLARC conducted a phase I archaeological investigation at the proposed Caledonia fly ash disposal site (Overstreet 1985). The survey covered approximately 90 acres; west of the Chicago and North Western Railroad line, east of State Highway 32, south of Rifle Range Road, and north of the centerline in Section 1 of Township 4 North, Range 22 East, Racine County. The survey included what is now Coal Storage Pile "B" and the southern portion of the wooded area to the west.

As a result of that survey, six archaeological sites were identified and tested; 47-RA-147, 47-RA-148, 47-RA-149, 47-RA-150, 47-RA-151, and 47-RA-152. Archaeological sites 47-RA-150, 47-RA-151, and 47-RA-152 were identified during shovel testing of the wooded portion to the west of the proposed disposal site. Archaeological site 47-RA-147, 47-RA-148 were identified adjacent to the Chicago and North Western Railroad line in the eastern portion of the survey area.

The abstract in the Wisconsin Bibliography of Archaeological Reports (BAR) states that only 47-RA-149 was considered potentially eligible for the National Register of Historic Places (NRHP). The Wisconsin Archaeological Site Inventory (ASI) describes this site as a historic homestead founded in 1858. Fieldstone and cement foundations with collapsed wood frame buildings were reported in the SW1/4 of the SW1/4 of the SW1/4 of the

NE1/4 of Section 1. This location has now been heavily affected by disposal activities and 47-RA-149 has most likely been destroyed (Van Dyke personal communication).

Archaeological sites 47-RA-147 and 47-RA-148 were formally evaluated and considered to be not eligible for the NRHP (Overstreet 1985) and have now been destroyed by the fly ash disposal site (Van Dyke 2004).

Archaeological sites 47-RA-151, 47-RA-152 and 47-RA-150 were never formally evaluated. Based on information in the ASI, they were considered to be out of the APE for the disposal area; however, 47-RA-150 has now either been buried or destroyed by disposal activities (Van Dyke personal communication). Archaeological sites 47-RA-151 and 47-RA-152 are between State Highway 32 and the large wetland area to the west of the disposal area. These sites are believed to be unaffected by activities related to the Oak Creek Power Plant; however this has not been confirmed through recent archaeological survey.

In 1986, GLARC conducted a phase I archaeological investigations of approximately 17 acres at four locations roughly north of the railroad loop in Section 36 of Township 5 North, Range 22 East and Section 31 of Township 5 North, Range 23 East in Milwaukee County (Overstreet 1986). No archaeological sites were identified as a result of that survey.

In the spring of 2002, AVD conducted a phase I archaeological survey of select areas to be affected by alterations to the railroad loop that is to the east of the fly ash disposal site. Portions of this area were surveyed by GLARC in 1985 (Van Dyke 2002). Two of the archaeological sites identified in the GLARC survey, 47-RA-147, 47-RA-148, as well as archaeological site 47-MI-366 that was identified through collector interviews by Richards in 1983, were reported to be in the AVD survey area. AVD was unable to locate the three sites and did not identify any new archaeological sites. As noted above, Van Dyke reports that the area had been heavily disturbed by disposal activities and that all three sites were probably destroyed.

During the 2004 field season, AVD conducted additional archaeological survey at five locations: the central portion of the OCPP property, the north and south sides of Elm Road where the ERGS would be constructed, the location of a horse farm, or Spang Farm, that is adjacent to Seven Mile Road and would be used for the stockpile of excavated soils and haul roads, the location of the Ruemler Farmhouse, and the location of an old building foundation. Survey of these areas resulted in the identification of 15 new sites, or find spots.

The largest location surveyed was the central portion of the OCPP property. Field reconnaissance suggests that the area was heavily disturbed by initial construction of the plant in the 1950s. Only one area within this portion of the project appeared to have any potential for significant archaeological resources. This was an area of old growth forest that is not going to be affected by the project.

Survey of the north and south sides of Elm Road identified two archaeological sites, 47-MI-513 and 47-MI-514. Both sites are lithic scatters and were recommended for further evaluation.

Eight archaeological sites, or find spots, were identified during the survey of the Spang Farm. The sites were documented in the phase I survey report as field numbers MI-5, MI-6, MI-7, MI-8, MI-9, MI-15, MI-16, and MI-17. These locations were later combined into four sites and assigned official site numbers 47-RA-292, 47-RA-293, 47-RA-294, and 47-RA-296. Three of the four sites were recommended for further evaluation. Archaeological site 47-RA-296 was considered to be outside the project area.

The location of the Ruemler Farmhouse contained four lithic scatters. The sites were documented in the phase I survey report as field numbers MI-11, MI-12, MI-13, and MI-14. All of these locations were small lithic scatters that were later combined into one site and assigned official site number 47-RA-297.

No prehistoric archaeological sites were identified at the location of the old building foundation. The area exhibited historic architectural debris, but was considered to have no historic significance and was not assigned a site number.

During the same field season, 2004, GLARC conducted phase I archaeological survey of nine different parcels totaling about 335 acres located throughout the project area. As a result of those investigations, nine prehistoric archaeological sites, or find spots, were identified as well as a number of historic artifact scatters. Three archaeological sites MI-515, MI-516, and field site 04.039.03 were recommended for NRHP evaluation.

In 2004, GLARC and AVD conducted formal evaluations of seven archaeological sites identified during their phase I surveys that year.

GLARC evaluated 47-MI-515 and 47-MI-516. Field site 04.039.03, which was identified and recommended for evaluation earlier, was not evaluated because it would be avoided by project activities. A series of backhoe trenches were used to strip the plow zone from sites 47-MI-515 and 47-MI-516 to search for prehistoric cultural features or intact cultural deposits that may exist below the plow zone. Only one cultural feature was identified, but it provided a limited amount of information. The results of these investigations suggested that the sites have been extensively plowed and lack significant research potential. Accordingly, neither site was recommended as eligible for the NRHP (Watson 2004b).

AVD evaluated archaeological sites 47-MI-513, 47-MI-514 at the Elm Road location and sites 47-RA-292, 47-RA-293, and 47-RA-294 at the Spang Farm location. Sites 47-MI-513 and 47-MI-514 were hand excavated while sites 47-RA-292, 47-RA-293, and 47-RA-294 were machine-stripped.

Twenty-eight 1x1 meter excavation units were placed at 47-MI-513. As a result of those excavations, only one diagnostic artifact, a Durst Stemmed projectile point, was

recovered. No cultural features, or datable contexts, were identified. The site was determined to be not eligible for the NRHP.

Six 1x1 meter excavation units were placed at 47-MI-514 yielding a total of 35 pieces of chert debitage. No diagnostic artifacts, cultural features, or datable contexts, were identified. The site was determined to be not eligible for the NRHP.

At archaeological sites 47-RA-292, 47-RA-293, and 47-RA-294 at total of 34 backhoe trenches were excavated and monitored for a total of about 15,198 square meters. The investigation failed to identify cultural features or intact contexts. The sites were determined to be not eligible for the NRHP.

4.8.3 Architectural Survey

Heritage Research, Ltd. conducted an architectural survey of the APE for the project. The APE for historic structures is roughly defined by Lake Michigan to the east, 10th Avenue to the west, Fitzsimmons Road to the north, and on the south, a point that is about one-half to three-quarters of a mile south of Seven Mile Road. This area includes the very southeast portion of the City of Oak Creek and the northeast corner of the Town of Caledonia.

Historically the area was largely farmed and most of the existing structures are associated with farms. However, STH 32, which bisects the APE, evolved from an early trail that connected Milwaukee to Racine, Kenosha and Chicago. Most of the no-farm residential structures in the area along STH 32, beginning in the 1960s and continuing through today, suburban development have contributed to the changing character of the landscape. The very southeast portion of the City of Oak Creek and the northeast corner of the Town of Caledonia are included in this area.

As a result of the architectural survey, eighteen properties were identified. Seventeen of the properties underwent a preliminary assessment to determine their potential for listing on the NRHP. One of the eighteen properties, the Reumler House, was previously recommended as eligible for listing on the NRHP and a determination of eligibility had already been completed for this property

Of the seventeen properties that underwent a preliminary assessment, fifteen had undergone changes that precluded their further evaluation (Vogel 2004). Two of the properties, both late Nineteenth Century farmhouses, retained sufficient integrity to convey a sense of their historic architectural characteristics suggesting that they may be eligible under NRHP Criteria C. Insufficient information was found to suggest that they may have strong associations with events contributing to the broad patterns of out history (NRHP Criteria A) or associations with persons significant in our past (NRHP Criteria B) (Vogel 2004).

However, because the Reumler House lacked significant individual architectural characteristics and is one of many examples of brick, gabled ell, late nineteenth century

farmhouses, the Corps determined that it was not eligible for the NRHP. The Corps presented this determination in a December 7, 2004, letter to the SHPO. The SHPO concurred with the Corps determination.

The two potentially eligible farmhouses were not further evaluated, because the potential effect to these properties is visual and will not diminish the characteristics that may qualify them for the NRHP.

4.8.4 Potential Impacts to Historical/Archaeological Resources

All portions of the Applicant's property that may be directly affected by the various project alternatives; as well as areas beyond the property that may be indirectly affected, have been surveyed. No historic properties have been identified. The Corps presented a no historic properties affected determination to the SHPO in a letter dated December 7, 2004. The SHPO concurred with that determination in a letter dated January 10, 2005.

4.8.5 Indirect and Cumulative Impacts

Since no eligible properties were identified during the surveys at the site, there would be no indirect or cumulative effects due to the proposed project or its alternatives.

4.8.6 Mitigation

No specific measures have been identified other than compliance with permit conditions that would require notification if any artifacts are discovered during construction.

Historical/Archaeological Resources Summary
None of the reasonable alternatives would affect historic or archaeological resources on or in the vicinity of the OCPP.

4.9 Tribal Coordination

Under the provisions of 36 CFR Part 800.4(a)(4), a federal agency has a responsibility to seek information from Indian tribes about properties that may be of cultural or religious importance to those tribes. The Corps identified Indian tribes whose ceded territory included the project area as well as other tribes whose aboriginal territory may have included the project area. The following tribes were identified: the Ho-Chunk Nation, the Menominee Tribe of Wisconsin, the Prairie Band of Potawatomi, the Citizen Potawatomi Nation, the Forest County Potawatomi, the Pokagon Band of Potawatomi, and the Gun Lake Band of Potawatomi.

Tribal consultation was initiated through a letter to each Tribal chairperson, signed by the District Engineer. The letter provided a brief overview of the project and asked if the tribe had any specific concerns about properties that may be present in the project area. All of the tribes were invited to provide input into the permit review.

After the initial letter was sent, Corps regulatory staff called the appropriate tribal representatives to confirm that they had received the letter and to determine their level of interest in participation in the Section 106 review for the project. Copies of the archaeological and standing structure survey reports were sent to all of the tribal representatives for formal comment. The Corps has not received comment on the reports, or specific information concerning cultural properties in the APE for the project that may be significant to the tribes.

In addition to this coordination, the Corps has corresponded with the CORA. CORA represents five tribes in Michigan with regard to the tribes' commercial and subsistence fisheries in the 1836 treaty-ceded waters of Lakes Huron, Michigan, and Superior. CORA submitted a comment letter in response to the Corps' public hearing in September 2004. The letter described their concern over the project's potential impacts on Lake Michigan with respect to loss of habitat, entrainment of living organisms, thermal discharges, and mercury loading.

The Corps has reviewed its trust responsibilities under the 1836 Treaty and determined that it would not preclude issuance of a permit that would otherwise be in the public interest. The issues raised by the CORA will be fully considered in the public interest review component of the Corps's permit review. The Corps' analysis of the concerns raised by the CORA issues can be found in the relative sections of this EA.

4.10 Land Use

4.10.1 Exist ing Conditions

The City of Oak Creek comprehensive land use plan was created in April 2002. The town of Caledonia land use plan was most recently updated in May 1999. Figure Vol. 2-19 in the FEIS shows a compilation of the planned land uses for both the city and the town in the area of land owned by the Applicant. Oak Creek's plan is identified as a "2020 vision" and Caledonia's plan guides development through 2010. (FEIS, p. 293)

Oak Creek's land use plan identifies most WEPCO-owned land as "Institutional," with two patches of "limited development area" located near the center of the site, which appear to be portions of the environmental corridor. Caledonia's Land Use Plan identifies much of WEPCO-owned land as Public-Semi Public. (FEIS, p. 295).

4.10.2 Proposed Project and Alt ernatives

Existing land uses and land use plans have developed around the existing OCPP. Because the proposed project and its alternatives are located at an existing power plant site, the potential for land use conflicts is expected to be minimal. (FEIS, p. 296)

The Applicant has obtained conditional use permits (CUPs) from the City of Oak Creek and Racine County for the proposed project. These CUPs should resolve any potential conflicts with land use plans in the project area.

Land Use Summary
The OCPP has existed on the project site since the 1950's when the surrounding areas were largely undeveloped and dominated by agriculture. Since that time the presence of the OCPP has been recognized in the growth of the two communities that overlap portions of the 1,000-acre property. As a result of this recognition, and as evidenced by the CUPs issued by the City of Oak Creek and Racine County, the construction of additional generating units at the site would not conflict with existing land uses and would not be considered an adverse effect.

4.11 Navigation

4.11.1 Exist ing Conditions

The existing OCPP contains the following structures on the bed of Lake Michigan: a 19-acre coal dock, the breakwater constructed in 1999, and the navigation channel that also functions as a structure for the cooling water intake. The placement of these structures was coordinated with the United States Coast Guard (USCG) prior to construction and none are considered an impediment to navigation on Lake Michigan. The breakwater and dock are currently outfitted with shoreside facility/pier lights as a safety measure.

4.11.2 North Site CUP, North S ite, and Caledonia Site, Open Cycle Cooling

Construction of additional generating units at the OCPP with open cycle cooling would require structures to be placed on the bed of Lake Michigan at three locations. These structures would include the dock extension, the cooling water intake structure and the cooling water discharge channel. The dock extension would be constructed north of the existing dock and would result in the filling of approximately 10 acres of lakebed. The expansion of the dock would extend no further into Lake Michigan than the existing structure and is not anticipated to have any impact on navigation. The cooling water intake would be located approximately 7,900 feet offshore in 43 feet of water. The intake would be comprised of an array of 24 cylindrical wedge wire screen assemblies. Each screen would be approximately 8 feet in diameter and 32 feet long and mounted on a manifold and riser pipe approximately 5 feet off the bottom of the lake.

Once installed, the screens would provide approximately 30 feet of clearance relative to 0.0 low water datum (LWD). This amount of clearance would be expected to be adequate navigational clearance for a vessel with a draft of 27 feet. The discharge structure would be located north of the existing coal dock and would extend out into Lake Michigan approximately 500 feet. As with the dock extension, this structure is not anticipated to have an impact on navigation.

The location of the proposed structures was coordinated with the USCG Marine Safety Office in Milwaukee to assess the potential effects on recreational and commercial navigation. The USCG has reviewed the project information and determined that the project would not have an adverse effect on navigation in Lake Michigan. The dock extension, intake structure, and discharge channel are located well outside of the regular

commercial navigational tracklines (J. Rickerson, email dated March 11, 2005). Recreational navigation would also not be adversely affected by the structures in the lake.

4.11.3 North Site CUP, North S ite, and Caledonia Site, Closed Cycle Cooling

The Applicant has indicated that use of closed cycle cooling would not require a new intake to be constructed in Lake Michigan. Instead, the existing OCPP intake could be utilized in its current condition or modified, if necessary, to provide the water needed for the additional generating units. In addition, the discharge channel for a closed cycle operation would be considerably smaller in size than that proposed for the open cycle alternatives. Although the closed cycle alternatives were not specifically coordinated with the USCG, it is assumed that since there are fewer structures and they are smaller in size there would be no impact on navigation.

4.11.4 I ndirect and Cumulative Impacts

None of the alternatives evaluated in this assessment would be expected to have an indirect or additive adverse effect on navigation in Lake Michigan.

4.11.5 Mitigation

No mitigation measures were identified.

Navigation Summary
The proposed project and the alternatives considered would have no effect on navigation.

4.12 Noise

4.12.1 Exist ing conditions

The existing noise environment around the proposed project area and location alternatives has been analyzed in terms of A-weighted (dBA) and C-weighted (dBC) sound scales as well as the frequency bands from 16 Hz to 8,000 Hz. The dBA scale enables an estimate of the noise that people would hear. The dBC scale enables an estimate of low-frequency noise that people might hear or feel. (FEIS, p. 328) All ambient noise measurements were taken with the OCPP in operation. Because the existing OCPP is a base load plant that operates nearly continuously, the noise it generates is considered part of the ambient noise setting. Existing noise levels were collected around the project area between October 2 and October 4, 2001. Five locations were selected to monitor, identified as MP1 through MP5, and are shown on Figures 11-3 and 11-4 of the FEIS.

At MP1, which is located in a park-like setting north of the proposed project site, the L_{90} background ambient sound levels ranged from 41-45 dBA. At MP2 and MP3, which are located adjacent to a dense residential area north of Elm Road and just west of the existing power plant boundary, background ambient sound levels in this area ranged from 39 to 45 dBA. Generally, these sound levels are similar to those found in most normal

suburban residential settings. At MP4, background sound levels were higher, reflecting the traffic noise from STH 32. At this location, background sound levels varied from 35 dBA to 52 dBA. The area near MP4 would be classified as a noisy urban environment during times when traffic levels are high. (FEIS, p. 329)

The equivalent continuous sound levels (Leq), measured in dBA, are higher than the L_{90} values and are more representative of the overall sound levels experienced around the existing project area. The Leq values ranged from 42 to 63 dBA at the monitoring sites. The Leq levels at MP2 and MP3, located near the residential area north of Elm Road, ranged from 51 to 63 dBA and 46 to 57 dBA, respectively. The values at MP2 are higher than those typically found in quiet residential settings. (FEIS, p. 329)

A comparison of the Lcq in dBA and dBC shows much higher dBC levels. The dBC levels measured at MP2, for example, ranged between 64 and 70 dBC. This indicates that there are relatively high levels of low frequency sound in the 16 to 250 Hz range. Sources of low frequency sound in the area are most likely from traffic noise; however, some portion of the low frequency component may originate at the existing power plant. (FEIS, p. 332)

4.12.2 Potential Noise Impacts

The most substantial noise impact from the proposed expansion would be due to earth-moving and plant construction activities that would occur for a period of 5 to 6 years. (FEIS, p. xxix) Construction noise impacts are addressed in the Construction Impacts Section of this EA.

Consultants for the Applicant used noise levels produced by the Pleasant Prairie Power Plant in Kenosha County as a surrogate for estimating the sound levels likely to be produced by the proposed project. The Pleasant Prairie power plant is a 1,200 MW coal fired facility similar to what is planned for the proposed project. It was assumed that the proposed power plant would have sound levels similar to the sound levels produced by the Pleasant Prairie plant. Since Pleasant Prairie is not an SCPC facility, the consultant included an additional 2 dBA for the noise level estimates. (FEIS, p. 333)

Figures 11-5 and 11-6 from the FEIS, pages 330 and 331, show noise contours for the OCPP units and the IGCC units at either the North Site or the Caledonia site. Noise contours for the proposed project with only the 2 OCPP units would be expected to be slightly closer to the plant. As shown, the majority of the 50 dBA noise contour on the landward side of the proposed plant for both the North Site and the Caledonia Site would be within the property boundaries. The predicted noise levels (L_{eq}) at monitoring points MP1 to MP5 for the proposed project appear to be between 40 and 50 dBA.

The analysis done by the PSCW indicates an expected increase for the operation of the proposed project and the IGCC unit that varies from an additional 6.8 dBA for MP1 to 2.1 dBA for MP4. Generation plant operation noise would be most noticeable at MP1 and

barely perceptible during the quietest hours of the day at the remaining monitoring points. (FEIS, p. 333)

Other Noise Sources:

Tonal Noise
Fans produce a tone as the rotating blade passes a vane or a strut that creates a pulsed frequency that results in a radiating tonal noise. Tonal noise is generally more noticeable than the atonal sounds commonly experienced in the environment. One source of tonal noise found at power plants is the wide variety of cooling fans that are often used. (FEIS, p. 334)

Coal Unloading and Handling
Noise from coal unloading and handling would vary considerably during the day. Coal handling and unloading activities are assumed to increase because the amount of coal used at the site would approximately double with the addition of the proposed project. Potential noise sources at the coal handling facility would include dumper cars, coal crushers, and noise from the transfer tower, mobile crawlers, tractors, and bulldozers. Four potential noise sources were selected to represent noise at the coal handling facility. Estimates of dBA, dBC, and octave band sound levels were provided for enclosed rotary car dumpers, coal crushers, transfer tower, and mobile crawlers, tractors, and bulldozers. The estimated individual sound levels at a distance of 2,600 feet for these sources would vary from 37 to 47 dBA and from 52 to 58 dBC. The higher dBC levels indicate the presence of a distinct and prominent low frequency component to the sound sources. The closest coal storage area to residences would be the 45-day inactive storage pile. This coal would only be used when other coal sources are unavailable or cannot be delivered. The active coal storage area would be located in a building, which would muffle coal-handling noise under most conditions. Overall noise from the coal-handling site could be higher than reported because of the cumulative effect when individual sound sources are combined. (FEIS, p. 334)

The best estimate from the Applicant's evaluation of noise levels due to coal unloading indicates that the maximum noise level at the closest sensitive receptors, just north of Elm Road, would be from 50 to 55 dBA. Because the noise from the coal handling operation would not be constant but transient and impulsive in nature, it would probably be more noticeable in a residential setting. (FEIS, p. 335)

Coal Train Traffic
Coal trains would approach the site primarily from the south and be routed along a looped rail spur just south of the coal handling facility. Rail delivery would be the Applicants' preferred method for delivering coal to the site. Noise from train traffic includes engine noise, rolling noise from rail cars, uncoupling and coupling noise, and starts and stops that result in noise as cars are engaged and begin to move. Estimates of the likely intensity of these noise sources are not available.

Currently, about five or six 125-car coal trains per week arrive at the plant. This would increase to nine coal trains per week with the proposed project. Coal trains can arrive at

any time of day. Other rail users are responsible for an additional seven trains per week with 80-100 cars and two trains per week of about 20 cars each. Residences closest to the rail lines approaching the plant would experience the largest noise impact. (FEIS, p. 335)

4.12.3 Comparison of Alternati ves

Noise impacts of the proposed expansion would be similar among location alternatives, although the North site could impact the Barton Oaks subdivision to a greater degree and the Caledonia site could impact residences along STH 32 near Botting Road to a greater degree. Noise levels associated with the North site CUP alternative may be lower due to relocation of coal storage areas and handling equipment. (FEIS, p. xxix)

Both open cycle and closed cycle cooling systems include a pumping station of similar size to circulate water through the condensers, so there is no noise difference due to this component of the cooling system. However, closed cycle cooling systems have additional pump noise to lift the water to the top of the cooling towers, and motor noise associated with the operation of the fans for mechanical draft towers. (WEPCO Submittal 12/7/04)

A consultant for the City of Oak Creek, Mr. George W. Kamperman, P.E., examined the potential noise levels from a multi-cell cooling tower assembly. Mr. Kamperman estimated that cooling towers would generate 3-5 dBA more noise than the entire planned generating complex. Nighttime noise would present the worst case when the ambient noise levels drop. Under certain conditions, ambient noise levels could increase by 10 dBA to nearby residents. It was Mr. Kamperman's opinion that the proposed project with cooling towers would not comply with the noise limits included in the City of Oak Creek CUP permit on most days of the month. (WEPCO Submittal 12/7/04). This opinion may be overestimated because his analysis included the IGCC unit. (WEPCO Submittal 12/7/04).

4.12.4 I ndirect and Cumulative Impacts

Cumulative noise levels may be higher due to the fact that some predicted noise levels were not added together, such as the noise emissions from the coal handling facility located on the northwest corner of the project site, and additions to the noise environment that would be associated with increases in rail traffic. (FEIS, p. 334) However, the noise increases for the proposed project do not appear to be cumulatively significant in the project area, particularly due to the sound level controls imposed by the Racine and Oak Creek CUPs, as discussed in the following Section.

4.12.5 Mitigation and Monitoring

The proposed project places the SCPC units below the existing grade at all location alternatives. The excavation for the plant site would create an embankment to the west and north of either site that would tend to attenuate sound emissions from the SCPC units.

The City of Oak Creek has negotiated a CUP with the Applicant that would establish two permanent noise monitoring stations. Station 1 would be located near the eastern edge of the Barton Oaks Subdivision just north of Elm Road, about 600 feet west of the railroad tracks. Station 2 would be located within the plant boundaries immediately north of Elm Road and midway between the railroad tracks and the proposed North Site. The CUP sets noise limits for both the construction phase and operation phase of the project, measured at Station 1.

During construction, allowable noise limits would be higher than those allowed during actual operation of the plant. Construction noise limits outlined in the CUP vary from 0 to 75 dBA (one hour L_{50}) depending on the phase of construction, day of the week, and time of day. During operation of the plant, the CUP noise limit, measured at Station 1, would be 50 dBA (10 minute Leq) and 60 dBC (10 minute Leq). The CUP proposes a fine of $1,000 per day for non-compliance. The Racine/Caledonia CUP also requires noise monitoring for the proposed project, for twelve months after completion of the excavation of the new power block facility.

In addition, the Applicant has considered the following actions to minimize noise generated by the proposed project. (FEIS, p. 369)

1) Expand the train track to accommodate entire trains (up to 150 cars) on the OCPP property, eliminating coupling and uncoupling noise.
2) Use automatic switches to reduce noise from trains stopping and restarting
3) Reduce repair-in-place or relocate the repair-in-place track to minimize noise from uncoupling and moving rail cars
4) Use an automatic indexer to dump coal from rail cars, to reduce the time of unloading, and associated noise, down from 16 to 5 hours.

Noise Summary
The predicted noise levels associated with the proposed project and its alternatives are not a significant increase over existing conditions. The noise limits of 45 and 50 dBA that would be required to be met at points MP5 and MP1, respectively, are not significant noise levels. It appears that the proposed project with closed cycle cooling may be slightly louder, by 3-5 dBA, and may exceed the noise limits imposed by the Oak Creek CUP. However, this increase is not enough to have a significant affect on total noise levels for the proposed project.

4.13 Recreation

4.13.1 Exist ing conditions

Currently, the Applicant's property is used by the public for some recreational purposes. Although Elm Road is owned by the City of Oak Creek, it is sandwiched between Applicant-owned properties and provides access to the existing OCPP. Residents of the Barton Oaks Subdivision often walk to the end of Elm Road and back. The road ends on the bluff above the shoreline, but walkers can see the lake at intervals along this road, and

for much of the distance OCPP facilities are not visible, although storage tanks for a nearby liquid natural gas facility are always visible.

Generally, the existing power plant facilities are prominent features as seen from the lake shoreline in nearby parks and public spaces. Parks in the vicinity of the OCPP include Bender Park and Cliffside Park. Area parks and recreation are addressed in detail in the state FEIS.

4.13.2 Potential Impacts to Recreation

Potential Impacts to area parks are discussed as follows.

Potential Impacts to Bender Park
Proposed construction and operation activities on the Applicant's land adjacent to Bender Park include using it as a construction laydown and spoils area, and ash mining from the North Oak Creek Landfill after construction of the proposed ERGS units. Figure 11-8 in the FEIS shows a simulation of how the plant site would look from the park's shoreline, after the construction of the ERGS.

Potential Impacts to Cliffside Park
The existing power plant facilities are either difficult or impossible to see from some of the developed facilities (camping areas, hiking areas) of Cliffside Park. They are, however, prominent landscape features as seen from the shoreline of this park, although the shoreline is somewhat difficult to access. The Applicant intends to keep its land along the lakeshore, just north of Seven Mile Road, as a natural area.

There would be no direct impacts to parks from the proposed project or the set of reasonable alternatives. Indirect effects would primarily result from reductions in the aesthetic quality of the area. The beneficial effects of the project would vary by alternative. The proposed project (North Site CUP) and the North site alternative would have several recreation components including a pedestrian/bike trail and fishing pier on the discharge structure to take advantage of the thermal discharge. The Caledonia alternative would include the pedestrian/bike trail but would not have fishing access due to accessibility constraints. The Applicant indicated that the proposed project with closed cycle cooling would not offer any public fishing advantage because of the lower flow and negligible heat content of a discharge from a closed cycle system would not attract fish to the area of the discharge. (WEPCO Submittal 12/04)

4.13.3 Indirect and Cumulative Impacts

No indirect or cumulative effects to recreation are anticipated in the project area.

4.13.4 Mitigation

As part of the proposed project, the Applicant would design and construct a recreational trail connection from Six Mile Road to an existing Racine County recreational trail that runs along the Union Pacific Railroad tracks between Six Mile

Road and Five Mile Road. (Racine CUP 8/16/04) There are other possibilities for promoting recreational use of the power plant site. Possible activities to improve or benefit recreation include: (FEIS, pp. 343-344)

1) If the project were built as proposed, it would be possible to use OCPP property to access the lakeshore and Bender Park.
2) As part of the proposed project, facilities could be provided for fishermen, such as parking, piers, and warming houses.
3) Development of an educational visitors center to provide information on energy issues in general and the OCPP and the ERGS in particular.
4) As part of the proposed project, the end of Oakwood Road would be extended to the plant site to provide access to the ERGS and OCPP for fishermen.
5) The proposed project could also provide access to Bender Park for hikers and non - motorized bikes, as part of the Milwaukee-Racine County recreational trail.

In addition, the Applicant intends to protect, as much as possible, existing wetland and wooded areas, and to plant grassland with seeds that encourage wildlife, especially birds. This may contribute to the enjoyment of neighborhood or area birdwatchers. (FEIS, p. 344)

Recreation Summary
There would be no direct impacts to any recreation areas in the project area. Indirect effects would be limited to minor visual impacts and minor increases in sound levels. Recreation opportunities would increase with proposed project.

4.14 Socioeconomics

4.14.1 Affe cted Communities

The communities close to the project area include homes along Elm Road, Barton Road, and Studio Lane in the Barton Oaks Subdivision; three private properties surrounded by land owned by the Applicant; and scattered housing closest to the proposed plant sites. (FEIS, p. 284)

Communities closest to the site may experience increased noise, dust, traffic problems, and visual impacts. Communities more than one-half mile away are usually too far from a power plant site to experience most of these impacts. However, visual effects along the lakeshore could extend further than that. (FEIS, p. 284)

4.14.2 Emplo yment

The existing OCPP employs about 300 people that live in the local area. The plant operates 24 hours per day with three shifts per day. Currently, about 70 percent of employees at the existing plant live north of the site, mostly in the City of Oak Creek. (FEIS, p. 307) The Applicant has estimated that 900 people on average and up to 1,500 people at any one time would be employed in the construction of the proposed project. Once constructed, the PSCW estimated that roughly 200 people would be employed to operate the proposed project. (FEIS, p. 308)

4.14.3 Propert y Impacts

No home or business relocations would be necessary for the proposed project or reasonable alternatives. The proposed plant has both advantages and disadvantages for property values. One property value advantage for the proposed project is location near property that provides natural visual buffers and a feeling of space. Another is location near a property that manages many of its areas for bird habitat, and includes a recreational trail. Property value disadvantages include noise and traffic. (FEIS, p. 306)

4.14.4 Public Facilities and Ser vices

The proposed project would not require construction of water pipelines off-site and there would be no change in Oak Creek's existing water or sewer utility facilities. See the Transportation Networks Section for a discussion of the potential traffic impacts.

4.14.5 Tax Revenues

In the year 2000, the OCPP net value fell below the $125 million cap. According to the Wisconsin Department of Revenue, the net value of the OCPP in 2001 was $117.3 million, which resulted in a 2002 shared revenue payment $703,894 and $351,947 to the city of Oak Creek and county of Milwaukee, respectively. Payment of $710,933 to the city of Oak Creek was expected for 2003. (FEIS, p. 302)

The PSCW has indicated that without new construction or capital improvements, the shared revenue payments to the city and county will continue to sharply decrease until the OCPP is fully depreciated. The new shared revenue program would result in a substantial increase in payments to municipalities and counties with new baseload plants as compared to the past shared revenue system. In the case of the proposed project, annual payments to the municipalities and counties involved would increase by at least 200 percent. Shared revenue payments to the municipalities and counties would start when the first proposed unit was operational and continue at the same level until the plant was decommissioned. (FEIS, p. 304) Table 4.14.5-1 shows the projected shared revenue payments to local governments.

The PSCW CPCN stated that the City of Oak Creek would receive annual shared revenue payments of $1.6 million for the first SCPC unit and increase to $3.2 million for the

second unit. This is consistent with the projections shown in Table 4.14.5-1.

Table 4.14.5-1
Projected ERGS Shared Revenue Payments

Annual Payments	One Unit	Two Units	Three Units
City of Oak Creek	$1,560,000	$2,380,000	$3,200,000
Milwaukee County	$1,150,000	$1,560,000	$1,970,000
Town of Caledonia	$1,150,000	$1,560,000	$1,970,000
Racine County	$1,560,000	$2,380,000	$3,200,000
Source: FEIS, Table 11-6			

As part of the proposed project, the Applicant has entered into an agreement with the City of Oak Creek to invest $10 million in redevelopment of parcels of land within the city of Oak Creek over the next 10 years. (Agreement By and Between the City of Oak Creek and WE, April 2, 2003). In addition, the agreement includes annual mitigation payments to the City of Oak Creek in the amount of $1.5 million for the first SCPC unit, and $750,000 for the second SCPC unit. These payments were authorized by the PSCW in its CPCN and would begin upon commencement of construction and terminate when the two proposed ERGS Units are fully in service.

4.14.6 Environmental Justice

Executive Order 12898 of 11 February 1994 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides that each federal agency must identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its actions on minority and/or low-income populations.

The residences closest to the Applicant's preferred project are in the Oak View #3 and Barton Oaks subdivisions, to the north and northwest of the site, referred to as the Barton Oaks subdivision. (FEIS, p. 292) Almost all the houses closest to the WEPCO site, including those in the Oak View #3 and Barton Oaks subdivisions were built after the existing OCPP (FEIS, p. 287). Based upon the demographic information provided in the state FEIS, the project would not have a disproportionate impact on any minority or low-income populations. The median household income for the census tracts in the project area is higher than the state's average median household income of $43,791 and the predominant race is white.

One community that may represent a low-income population is Oak Crest, an assisted living facility, is located about 0.25 mile (1,125 feet) northwest of WEPCO's property boundary. (FEIS, p. 291) The impacts of the proposed project and its alternatives would generally be distributed among the surrounding communities and would not have a

disproportionately higher impact on the Oak Crest community. Therefore, no disproportionately high and adverse impacts on minority and low- income populations are expected as a result of the proposed project or its alternatives. Under the definition of Executive Order 12898, there would be no adverse environmental justice impacts.

4.15 Solid/Hazardous Waste

A coal-fired power plant produces solid and hazardous wastes. Primary solid wastes generated by the proposed project would include ash from coal combustion, gypsum from capturing SO2 emissions, gasifier slag, and elemental sulfur or sulfuric acid. Solid wastes from the shops and offices on site would be recycled as much as possible. Waste that could not be recycled would need to be collected and taken away by waste management contractors. (FEIS, p. 227)

4.15.1 Exist ing Conditions

WEPCO's existing plant currently creates two main by-products: fly ash (class C and F) and bottom ash. At this time, over 96 percent of these by-products are recycled. The existing OCPP has coal piles, coal combustion points, handling areas, early ash disposal areas, and three existing landfills within the OCPP property. Two of the three landfills are closed, namely the North Oak Creek Landfill and the South Oak Creek Landfill.

Waste from the existing OCPP landfill is disposed at the open landfill within the property and at two off-site landfills. The open on-site landfill is the Caledonia Ash Landfill, located in the town of Caledonia, approximately one mile west of the OCPP. The off-site landfills are the Pleasant Prairie Power Plant Ash Landfill, located in the village of Pleasant Prairie in Kenosha County, and Highway 32 Ash Landfill, located in the town of Grafton.

Open Landfills:

Pleasant Prairie Power Plant Ash Landfill
This landfill's remaining capacity as of January 1, 2003 was roughly 4 million cubic yards. At the current rate of waste disposal and reclamation, this landfill's site life is estimated to be greater than 100 years. (FEIS, p. 228)

Highway 32 Ash Landfill
This landfill's remaining capacity as of January 1, 2003 was roughly 685,000 cubic yards. At the current rate of waste disposal, the site life is estimated to be 35 years.

Caledonia Ash Landfill
This landfill's remaining capacity as of January 1, 2003 was 2.6 million cubic yards. At the current rate of waste disposal and reclamation, the site life is estimated to be 66 years. (FEIS, p. 231)

Early Ash Disposal Areas
There are four known places within the OCPP property where ash was buried in the early years of plant operation. Each area is of an irregular shape, and present locations are not entirely accurate.

4.15.2 Potential Impacts, Proposed Project and Alternatives

Waste products and byproducts that would be generated by the proposed project include 206,300 tons of fly ash, 51,600 tons of bottom ash, and 543,600 tons of synthetic gypsum per year. Approximately 214,900 cubic yards of ash would be generated annually. Except for a small percentage of ash that would be re-used, the ash would be disposed of at one of three landfills identified previously: the Caledonia landfill, the STH 32 Ash landfill, or the Pleasant Prairie Ash landfill. (FEIS, p. xxviii)

The gasification process would result in the formation of about 100,000 tons of slag per year. The amount of elemental sulfur production would be directly related to the sulfur content of the coal, and is estimated to be 33,200 tons of elemental sulfur per year. Approximately 60,000 tons of sulfuric acid per year, or 62,400 gallons per year would be produced. This material may be considered hazardous waste. (FEIS, p. 235)

Disposal of dredged material and fill sources
Four methods of dredge material disposal are possible: landfilling the dredge spoils on WEPCO property, landfilling off-site in a licensed landfill, using the spoils on-site as construction fill, and using the spoils as beach nourishment. It is estimated that a combination of these disposal options would be applicable, depending upon sediment characterization done under recent and future sediment sampling activities. (FEIS, p. 212)

Excavation Debris
Extensive site work, including excavation, grading, and relocation of soils, would occur during construction of the proposed project to create a relatively flat site to build the proposed facilities. Past studies show that ash and other solid waste materials were buried on the OCPP site prior to their regulation. Locations of some of these unregulated disposal sites are yet to be identified. (FEIS, p. 237)

4.15.3 I ndirect and Cumulative Impacts

The incremental additional waste that would result from the proposed project is not expected to be cumulatively significant.

4.15.4 Mitigation and Monitoring

If waste disposal areas or contaminated sites were encountered during construction, remediation would be necessary before construction on that location could continue. The Applicant would be required to notify the WDNR and submit a remediation plan for WDNR approval. An estimated two million cubic yards of material would have to be

managed either on site or off site during the construction. The Applicant would need to develop, and submit for the WDNR's approval, a comprehensive material handling plan to manage the excavated material. The plan would have to include soil and waste characterization, temporary storage information, off site transportation, and other items. The Applicant has stated their intention to use most of the materials on site for alterations at the two closed landfills. (FEIS, p. 238)

Beneficial Re-Use
Bottom ash is currently being utilized as base or sub-base material for building floors and foundations, paved roads, and parking lots. Fly ash is currently being utilized in portland cement production, soil stabilization, cold in-place recycling of asphalt pavements, and as a supplemental fuel. The Applicant expects full utilization of ashes generated by the proposed project within ten years of implementation of each SCPC unit. The Applicant expects that all synthetic gypsum would go to wallboard production and all sulfur or sulfuric acid would be utilized for commercial uses. (FEIS, p. 244)

Solid/Hazardous Waste Summary
Solid and hazardous waste streams would be similar to those currently generated at the existing OCPP. There is adequate landfill capacity in the project area for waste associated with the proposed project. Changes in the type and quantity of waste that would result from the proposed project and its alternatives are not expected to be significant.

4.16 Water Quality

4.16.1 On -shore Impacts, Proposed Project and Alternatives

Potential impacts to on-shore water quality would result from the discharge of material into wetlands and streams and the overland transport of contaminants into these aquatic resources. WDNR Chapter 30 and Clean Water Act Section 404 regulations require the use of clean suitable fill for authorized discharges into wetlands or stream channels, thus reducing the potential for adverse effects.

Other requirements imposed under state and local law, such as spill prevention plans, erosion control plans, stormwater management plans, and emergency response plans would considerably reduce the potential for adverse water quality effects from the project. The WDNR has evaluated the potential water quality impacts of these discharges and determined that there would not be a violation of state water quality standards. The WDNR issued Clean Water Act Section 401 water quality certification for the North Site CUP alternative on November 22, 2004.

4.16.2 L ake Water Quality Impacts, Proposed Project and Alternatives

Impacts to Lake Michigan water quality resulting from wastewater and storm water discharges regulated under the State of Wisconsin Pollutant Discharge Elimination System (WPDES) are discussed in Section 4.19 of this EA. Impacts to Lake Michigan

water quality resulting from the discharge of dredged or fill material are discussed in the following paragraphs.

Potential impacts to lake water quality from open cycle cooling would result from construction of the intake structure, construction of the dock expansion, construction of the discharge channel, construction of the emergency back-up intake structure and maintenance dredging. Closed cycle cooling alternatives would involve all of these except for construction of a new cooling water intake. The magnitude of the impact would also tend to be less for the closed cycle options when considering the discharge channel.

Adverse water quality effects would stem from the release of contaminants into the water column from the discharge of fill material or dredging of bottom sediments. Similar to the requirements for discharges into on-shore aquatic resources, only clean suitable fill could be discharged into the lake thus reducing the potential for adverse effects. The placement of clean material during construction could result in increases in turbidity and decreases in dissolved oxygen. These adverse effects would be temporary and could be localized though use of best management practices (i.e silt curtains).

Within the proposed dredge area, two studies were completed to characterize the existing sediment quality. The first study was undertaken in 1998 as part of the Applicant's sediment characterization study associated with its application to the WDNR to dredge the existing intake channel and construct a breakwater on the lakebed. The second study was undertaken in 2002 by the Applicant to characterize sediments within the proposed dredge area for the ERGS project

The 1998 sampling was conducted by W .F. Baird & Associates, Ltd. in December 1998. Four borings were taken within the existing channel. The 1998 data indicate low to undetected amounts of chlorinated organic compounds such as PCBs and pesticides. In most cases, reported levels were below the laboratory detection level. Metals concentrations were at or below mean concentrations from other locations on Lake Michigan. (FEIS p. 210)

In 2002, the Applicant conducted additional sediment sampling to characterize the areas identified for dredging for the proposed project. The 2002 analyses identified trace levels of metals close to or below mean individual concentrations from other locations in Lake Michigan and polycyclic aromatic hydrocarbons (PAHs) within the existing navigation channel. The PAHs were most likely attributable to dust from the nearby coal dock. No PCBs were detected in the 2002 samples.

Excavation of these sediments could release PAHs into the surrounding water column during dredging activities. However, freed PAH contaminants would not be expected to significantly impact water column organisms due to dilution and particulate attraction. Concentrations of PAHs would not be expected to exceed effect concentrations. No other sediment constituents were found to represent a potential impairment to short- or long-term water quality.

4.16.3 Indirect and Cumulative Impacts

Transboundary Impacts
Under the Clean Water Act, a permit may not be issued for a point source of pollution in a source State if there cannot be assurance of compliance with the applicable water quality requirements of other affected States. (40 C.F.R. § 122.4(d)) Although the Act does not address compliance with applicable water quality requirements of other affected countries, a comparison was made to determine if the proposed project would meet this requirement and would essentially meet the Act's intent to prevent degradation of the water quality of a source State's neighbor. Because of the requirement for clean fill material and the temporary nature of the adverse effects from dredging, no trans-boundary effects are anticipated from the discharges addressed in this section.

Water quality impacts associated with the discharge of dredged or fill material or the placement of structures in Lake Michigan are not expected to degrade water quality. The WDNR has issued 401 water quality certification and a WPDES permit for the North Site CUP alternative, which demonstrates compliance with State standards for water quality and wastewater discharges.

4.16.4 Mitigation

The WDNR, in its Chapter 30 permit, has included conditions to mitigate the potential adverse effects of construction activities on inland and lake water quality. The conditions are specific to the WDNR approval of the North Site CUP; however, it is assumed they have general applicability to the other reasonable alternatives based on the similarity of design and construction methods. The conditions of this permit would become conditions of any Section 404 and Section 10 permit issued for the proposed project. A copy of the WDNR Chapter 30 permit is provided in Appendix C of this EA.

Water Quality Summary
No adverse effects to water quality are anticipated with the discharge of dredge or fill material into waters of the United States for any of the reasonable alternatives. Potential adverse effects associated with wastewater discharges are addressed in the Wastewater Discharges Section of the EA.

4.17 Potable Water Use

4.17.1 Exist ing conditions

The existing OCPP obtains potable water from the city of Oak Creek (FEIS, p. 301). All of the water withdrawn for the existing OCPP is taken from Lake Michigan. About 0.6 million gallons per day is supplied by the City of Oak Creek public water supply, which is also drawn from Lake Michigan.

4.17.2 Potential Potable Water Impacts of Proposed Project

The proposed SCPC units, regardless of location alternative, also would use potable water from the City of Oak Creek for three purposes: employee use, demineralizer make-up water, and four percent of the water used for the sulfur scrubber. The total amount of city water used would be about 0.295 MGD. Roughly 9,000 gallons per day would return to the city via the Oak Creek sanitary sewer. The remaining water would be lost through evaporation to the air, discharge to the lake, or through off-site disposal of waste products. The estimated combined potable water use for the proposed project and the OCPP operation would be 0.895 MGD

South Milwaukee and Oak Creek Water Utilities have drinking water intakes located on the bed of Lake Michigan. These locations are northwest of the proposed dredging area. Depending upon the drift of sediment suspended by dredging activities, there is a slight risk of impacts to these utilities. Due to water treatment processes, no serious problems with drinking water quality would be expected to occur. (FEIS, p.216)

4.17.3 L ocation Alternatives, Closed Cycle Cooling

The potable water supply would be the same for the proposed project with either open cycle or closed cycle cooling. Consumptive water use directly from Lake Michigan for the proposed project is discussed in the Lake Water Consumption Section.

4.17.4 I ndirect and Cumulative impacts

Water used by the Integrated Gasification Combined-Cycle (IGCC) unit would be comparable to one of the SCPC units, so the total volume of municipal water used for all units would be approximately 1.04 MGD. Total demand for potable water in the project area is not expected to exceed the capacity of the Oak Creek Water and Sewer Utility, which has a capacity of 20 MGD. (http://www.water.oak-creek.wi.us/)

4.17.5 Mitigation

To minimize the risk of affecting potable water supplies, the Applicant would be required to notify water supply facilities prior to initiating dredging activities.

Potable Water Use Summary
No adverse effects to potable water supply are anticipated in the project area due to the capacity of the Oak Creek Water and Sewer Utility and precautions that would be taken to protect potable water supplies.

4.18 Wastewater Discharges

4.18.1 Exist ing wastewater discharges

Existing Cooling Water Discharge
The OCPP discharges non-contact condenser cooling water along with treated wastewater via outfall 007. The existing cooling water discharge is warmer than the receiving water and also contains chlorine, which is added to the cooling water to control bio-fouling in the condensers. Bio-fouling control is generally done by chlorination of the water (usually with sodium hypochlorite, i.e., liquid bleach). (WEPCO submittal 12/7/04) The cooling water is combined with treated OCPP wastewater prior to discharge to the lake.

Existing Treated Wastewater Discharge
Currently, OCPP wastewaters that require treatment prior to discharge are processed through an on-site wastewater treatment plant (WWTP). Operations contributing process wastewater, which discharge from the WWTP via outfall 007, include low volume wastewaters, coal pile runoff, nonchemical metal cleaning waste, storm water, and ash landfill leachate. (WPDES Fact Sheet)

The average wastewater discharge from the OCPP units 5-8 combined is 977 MGD, consisting primarily of condenser cooling water. Of this total discharge, the average effluent flow from the WWTP is 3.4 MGD. (WPDES Fact Sheet, p. 2)

Existing Thermal Discharge
The OCPP facility discharges heat to Lake Michigan via the condenser cooling water outfalls. Currently, the OCPP facility is not subject to thermal effluent limitations under Wisconsin Statutes 283.13 or 283.19. The OCPP combined cooling water and treated wastewater discharge is 12 degrees Fahrenheit warmer than the ambient lake temperature of 60 degrees F.

Existing Mercury Concentrations
Although the effluent contains mercury due primarily to the presence of mercury in the coal, under the rules that applied at the last permit re-issuance, no mercury effluent limitation was established for the OCPP treated wastewater outfall. Sampling data from this outfall shows a range of mercury concentrations from less than 0.5 ng/L to 3.0 ng/L. Sludge from this treatment system is transported to a WDNR approved landfill. (WPDES Fact Sheet, p. 22)

In July 2004, the Applicant and the WDNR collected lake water samples from the vicinity of the proposed intake for mercury analysis. The results ranged from 0.32 to 0.43 ng/L total mercury. This range is consistent with the ambient Lake Michigan total mercury levels of 0.29 ng/L to 0.40 ng/L, as reported by the USEPA in the Lake Michigan Mass Balance Study. (WPDES Fact Sheet, p. 22)

The WDNR sets effluent limitations for discharge constituents, including mercury, under Chapters NR 102 through NR 106, Wis. Admin. Code. The effluent limitation for mercury in the WPDES permit issued by the WDNR, effective March 1, 2005, is 1.3 ng/L, measured at the outfall to Lake Michigan. Chapter NR 105, Wis. Adm. Code, establishes surface water quality criteria for toxic substances. The mercury acute and chronic criteria for the protection of fish and aquatic life in Lake Michigan are 830 and 440 ng/L, respectively.

The wildlife criterion for mercury in Lake Michigan is 1.3 ng/L and the human threshold criterion is 1.5 ng/L. The mercury wildlife criterion is the concentration of mercury which, if not exceeded, protects Wisconsin's wildlife from adverse effects resulting from ingestion of surface waters of the state and from ingestion of aquatic organisms taken from surface waters of the state. (NR 105.07, Wis. Adm. Code) According to the Applicant, EPA approved bioaccumulation factors (BAFs) were used in establishing the 1.3 ng/L criterion to protect against concentration in the food chain. (WEPCO Letter, 10/8/04)

4.18.2 Wastewater Disch arges Associated with the Proposed Project

The proposed project would use open cycle cooling, similar to the existing system. Cooling water would be returned to the lake roughly 15 and 21 degrees Fahrenheit warmer than the ambient lake temperature, which would be an increase of 3 to 9 degrees Fahrenheit over the current conditions. The water discharged would also contain chlorine, similar to the existing conditions. No other additives are proposed for the open cycle cooling system. (WEPCO submittal 12/7/04)

Cooling water returned to Lake Michigan from the two SCPC units would be discharged via an outfall structure along the shoreline of Lake Michigan. The Applicant has obtained a WPDES permit from the WDNR to discharge the cooling water, along with treated plant wastewater. The discharge would comply with state water quality standards.

The WPDES permit issued to the Applicant by the WDNR specifies discharge limits from the WWTP prior to combining with any other waste stream. Parameters to be monitored are flow rate, mercury, suspended solids, oil & grease, iron, phosphorus, and copper. Categorical limitations are applied at this sample point for the following parameters:

Suspended solids	daily max:	100 mg/L
	monthly avg:	30 mg/L
Oil & grease	daily max:	20 mg/L
	Monthly avg:	15 mg/L
Iron	daily max:	1.0 mg/L
	Monthly avg:	1.0 mg/L
Copper	daily max:	1.0 mg/L
	Monthly avg:	1.0 mg/L

The WPDES permit issued to the Applicant by the WDNR requires the discharge limits shown in Table 4.18.2-1 for the proposed wastewater treatment system effluent, which includes low volume wastewater, coal pile runoff, nonchemical metal cleaning waste, storm water, and landfill leachate.

Table 4.18.2-1
Wastewater Treatment System Effluent Limitations for the North Site CUP Alternative

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type
Flow Rate		MGD	Daily	Total Daily
Mercury, Total Recoverable	Daily Max	1.5 ug/L*	Quarterly	Grab
Suspended Solids, Total	Daily Max	100 mg/L	Daily	24-Hr Flow Prop Comp
Suspended Solids, Total	Monthly Avg	30 mg/L	Daily	24-Hr Flow Prop Comp
Suspended Solids, Total	Daily Max	7,205 lbs/day	Daily	Calculated
Suspended Solids, Total	Monthly Avg	1,351 lbs/day		Calculated
Oil & Grease (Hexane)	Daily Max	20 mg/L	Weekly	Grab
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Weekly	Calculated
Oil & Grease (Hexane)	Daily Max	1,441 lbs/day	Weekly	Calculated
Oil & Grease (Hexane)	Monthly Avg	675 lbs/day	Weekly	Calculated
Iron, Total Recoverable	Daily Max	1.0 mg/L	Monthly	Grab
Iron, Total Recoverable	Monthly Avg	1.0 mg/L	Monthly	Grab
Phosphorus, Total	Monthly Avg	1.0 mg/L	Daily	24-Hr Flow Prop Comp
Copper, Total Recoverable	Daily Max	1.0 mg/L	Monthly	24-Hr Flow Prop Comp
Copper, Total Recoverable	Monthly Avg	1.0 mg/L	Monthly	24-Hr Flow Prop Comp
Oil & Grease (Hexane)		lbs/day	Weekly	Calculated

*limit based on best professional judgement.
Source: WPDES Permit for the Elm Road Generating Station

The WPDES permit issued to the Applicant by the WDNR requires the discharge limits shown in Table 4.18.2-2 for the open cycle cooling water discharge.

Table 4.18.2-2
Cooling Water Discharge Limitations for the North Site CUP Alternative

Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type
Flow Rate		MGD	Daily	Total Daily
Mercury, Total Recoverable	Daily Max	1.3 ng/L	Weekly	Grab
Antimony, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp
Beryllium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp
Arsenic, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp
Temperature	Daily Avg	Degree F	Daily	Continuous
Temperature	Daily Max	Degree F	Daily	Continuous
Heat	Daily Max	6,200 MBTU/hr	Daily	Calculated
Chlorine, Total Residual	Daily Max	200 ug/L	Daily	Grab
Chlorine, Total Residual Discharge Time	Daily Max	120 min/day	Daily	Total Daily
Phosphorus, Total	Monthly Avg	1.0 mg/L	Weekly	24-Hr Flow Prop Comp
Source: WPDES Permit for the Elm Road Generating Station				

Thermal Discharge

The Applicant filed a petition with the WDNR under s. 283.17, Wis. Stats., and NR 209, Wis. Adm. Code, for alternative effluent limitations. The Applicant submitted evidence in support of its request for alternative effluent limitations and requested the establishment of alternative thermal effluent limitations based on the maximum increase in temperature of the cooling water. The Applicant's submittals conclude that the discharge of once-through cooling water from the existing OCPP units would assure the protection and propagation of a balanced indigenous population of shellfish, fish and aquatic life in Lake Michigan. The WDNR concurred with this conclusion and established thermal effluent limitations of 1500 MBTU/hr each for outfalls 003 and 004, and 1700 MBTU/hr each for outfalls 005 and 006. (WPDES fact sheet, p. 11) Depending on the time of year, the discharge would be between 15 and 21 degrees Fahrenheit warmer than the ambient lake water temperature.

Mercury Discharge

The Applicant has estimated that the discharge of mercury in the water from the proposed plant would be less than 1.3 pounds per year. (WPDES permit, p. 25) Coal is the source of the mercury. The mercury would be removed from the combustion exhaust by the FGD system, which would be treated in the plant wastewater treatment system, and a residual concentration of mercury would be in the treated wastewater, which would be discharged to the lake. The FGD system is needed to meet air quality standards and air permit requirements.

If the FGD system were not used, the proposed project combined with the OCPP would release between 125 and 250 pound per year of mercury to the atmosphere annually and the amount of mercury discharged to Lake Michigan via the wastewater would be essentially zero.

Due to the proposed project's proximity to Lake Michigan and the prevailing climatological conditions, much of the mercury in the air emissions would fall into the lake as dry or wet deposition. The FGD system coincidentally transfers between 60 and 185 pounds of mercury from the power plant emissions into the FGD solids and water output stream. Following separation and treatment, it is estimated that the discharge of mercury to the lake in the wastewater would be about 1.5 pounds per year. Therefore, the potential total reduction of mercury to Lake Michigan is in the range of 60 to 185 pounds per year. The WDNR determined in their WPDES permit evaluation that the Applicant has removed mercury from the proposed discharge to Lake Michigan to the maximum extent practicable. (WPDES Fact Sheet, p. 28)

The WPDES permit limits the concentration of mercury in treated wastewater to 1.5 ug/L, and requires the Applicant to submit, by September 1, 2009, a report examining the efficacy and cost effectiveness of technologies available for reducing mercury effluent concentrations to levels below 1.5 ug/L. (WPDES permit, 3/1/05) The permit requires monthly monitoring for mercury, and the development and implementation of a mercury minimization program, applicable to all non-storm water outfalls.

According to the WDNR, effluent limitations for new or expanding discharges of BCCs to the Great Lakes may not exceed the most stringent water quality criterion for the substance. As indicated previously, the most stringent water quality criteria for mercury is 1.3 ng/L. Therefore, WDNR established an effluent limitation for mercury, a BCC, of 1.3 ng/L for the combined discharge of cooling water and treated wastewater into Lake Michigan.

The proposed WE Energies alkali-sulfide (A-S) treatment process for the FGD waste stream is capable of consistently achieving the WPDES effluent concentration limit of 1.5 ug/L of mercury. This 1.5 ug/L total mercury Best Professional Judgment limitation would be applied at an in-plant sample point prior to mixing with demineralizer regeneration waste and condenser cooling water.

The design flow rate for the FGD wastewater treatment process is 432,000 gallons per day. This process wastewater effluent would be discharged into the condenser cooling

water and discharged to the lake. The design flow rate of the condenser cooling water is 1,065 MGD. WDNR current regulations do not prevent dischargers from combining wastewater streams to attain water quality-based effluent limitations. To evaluate whether the Applicant could meet the effluent limitation, the WDNR performed the following simple dilution analysis.

The concentration of the mixed effluent for open cycle is calculated as follows:

[(0.432/1065)x(1,500 ng/L)] + [(1.0)x(0.37 ng/L)] = 0.98 ng/L

where: 0.432/1065 is roughly the fraction of the design flow rate to the total flow, 1,500 ng/L is the maximum allowable (BPJ) WWTP concentration prior to mixing, 1.0 is roughly the fraction of the condenser cooling water flow to the mixed flow (negligible consumptive water loss), and 0.37 ng/L is the mid-point of the Lake Michigan ambient mercury concentration range.

Because 0.98 ng/L is less than 1.3 ng/L, the proposed discharge is expected to comply with the effluent limitation for mercury.

4.18.3 Differ ences in Wastewater Discharges Among Alternatives

There would be no notable differences among the location alternatives with regard to wastewater discharges. However, there would be substantial differences in discharges with closed cycle cooling verses open cycle cooling

Differences in Discharge Volume

If closed cycle cooling were used, the cooling water discharge would consist of a small volume, relative to open cycle cooling, of water containing a higher concentration of dissolved solids due to the continuous evaporation that occurs with the use of cooling towers. This water is identified as "blowdown" water. Thus, the discharge from closed cycle cooling consists of the "blowdown" to maintain the water chemistry control in the cooling tower system. Chemicals to control corrosion (e.g., phosphate based additives), scaling (sulfuric acid for pH control) and bio-fouling (usually chlorine, such as sodium hypochlorite and bromine use) are used in cooling tower systems. The amount of closed cycle cooling water returned to the lake in the form of blowdown is estimated to be between 2.9 and 3.6 MGD. The blowdown water would be combined with treated wastewater prior to discharge from an on-shore outfall. The total discharge volume would be between 6.3 and 7 MGD.

It is expected that the same WWTP effluent limits would apply to the proposed project if it utilized closed cycle cooling. However, effluent concentrations of the combined discharge to the lake would be substantially higher due to a much smaller total volume of water that would be discharged. The combined discharge would be between 6.7 and 7.4 MGD with closed cycle cooling, as compared to 1,065 MGD for open cycle cooling.

Thermal Discharge
Because the heat transferred from the steam in the condensers is released to the atmosphere rather than to the water, any thermal component of the closed cycle cooling discharge is minimized. Consequently, there would be a negligible thermal discharge associated with the alternative to use closed cycle cooling.

Mercury Discharge
For the proposed project with a closed cycle cooling system, treated wastewater containing a maximum value of 1.5 ug/L mercury would be combined with 2.9 to 3.6 MGD of blowdown water prior to discharge to the lake. To determine whether this combined discharge would meet the WPDES effluent limit of 1.3 ng/L for mercury, the following simple dilution analysis was preformed.

The concentration of the mixed effluent for closed cycle is calculated as follows:

$$[(0.432/2.9)x(1{,}500\ ng/L)] + [(1.0)x(0.37\ ng/L)] = 224\ ng/L$$

where: 0.432/2.9 is roughly the fraction of the effluent flow to the mixed flow, 1,500 ng/L is the maximum allowable (BPJ) WWTP concentration prior to mixing, 1.0 is roughly the fraction of the condenser cooling water flow to the mixed flow, and 0.37 ng/L is the mid-point of the Lake Michigan ambient mercury concentration range (this could be slightly higher due to evaporation of 14.4 MGD down to 2.9 MGD)

The estimated value of 224 ng/L would meet the mercury acute and chronic criteria for the protection of fish and aquatic life in Lake Michigan of 830 and 440 ng/L, respectively. However, this discharge would not meet the WPDES effluent standard of 1.3 ng/L. Either additional treatment or alternative sources of dilution water would be required.

The Applicant, in their polishing technologies study report, concludes:

> *Given the uncertainty associated with the incremental treatment of mercury by a polishing technology it cannot be concluded at this time whether such systems would be cost-effective. Assuming that one of these technologies could be successfully operated as a polishing technology following an alkali-sulfide system, the mercury removal efficiency would need to be at least 50% (i.e., reducing the estimated annual mercury discharge from 1.5 to 0.75 pounds per year) before the cost-effectiveness would even approach the high-end values EPA uses for evaluating the effectiveness of its water regulatory programs. Therefore, based on uncertainty associated with the use of the potential polishing systems and the high costs per pound of mercury removal, the use of these technologies does not appear to be cost-effective at this time.*

Even under the best of scenarios, additional treatment may only achieve a 50% reduction in WWPT mercury levels and still not meet the most stringent effluent standard. Dilution would be required. Using the simple dilution equation developed by the WDNR, an

estimate of the volume of cooling water and Lake Michigan water needed to ensure that the effluent would be consistently below the standard of 1.3 ng/L is provided below.

> [(0.432/697)x(1,500 ng/L)] + [(1.0)x(0.37 ng/L)] = 1.3 ng/L
> where: 0.432/697 is roughly the fraction of the effluent flow in relationship to the lake water needed.

Around 697 MGD of cooling water and Lake Michigan water would be needed to dilute the WWPT effluent to meet the 1.3 ng/L effluent standard. If additional polishing to reduce the maximum value by 50% is combined with pumping dilution water, approximately 348 MGD of cooling water and Lake Michigan water would still be required to meet the effluent standard. Additional water may be required if the mercury concentration in the condensed cooling water (14.4 down to 2.9 MGD) is greater than the estimated 0.37 ng/L.

Under the closed cycle cooling system, the effluent would be discharged near shore in the littoral zone, whereas under the open cycle cooling alternative the water would be discharged further in the Lake, in approximately 20 feet of water. Discharging near shore would mean less mixing with lake water and would increase exposure to wildlife, which make extensive use of the littoral zone.

The open cycle cooling system would be able to consistently meet the wildlife mercury criteria of 1.3 ng/L. The closed cycle cooling system with FGD generated effluent would consistently meet the mercury acute and chronic criteria for the protection of fish and aquatic life in Lake Michigan. However, the closed cycle cooling system with FGD generated effluent would not consistently meet the wildlife mercury criteria of 1.3 ng/L without extensive additional clean-up and/or dilution measures. The closed cycle would discharge effluent in the littoral zone, with less mixing and potentially increasing the bioavailability of mercury to wildlife. The closed cycle would generate around 5% more atmospheric and wastewater mercury load to Lake Michigan, because of the increased coal consumption.

4.18.4 Indirect and Cumulative Impacts

Mercury

Based on two-unit operation with an open cycle cooling system, the annual amount of mercury in the coal used to power the ERGS units is 283.5 kiolograms. Of the total mercury produced, WDNR estimates an atmospheric loading of 28.8 kg/year and an effluent loading of 0.59 kg/year, with the FGD system (Table 4.18.4-1). Due to the power plant's proximity to Lake Michigan and the prevailing climatological conditions, much of the mercury in the air emissions would fall into the lake as dry or wet deposition.

The percent of air emissions from either the OCCP or the proposed ERGS units contributing to Lake Michigan total net load is unknown without air modeling. Under the assumptions above, the OCCP presently contributes a maximum of 7% to 15% of the total net atmospheric load to Lake Michigan. ERGS with the FGD would increase the total net atmospheric load to Lake Michigan by 4% or 7 to 15% without the FGD. The

wastewater discharge from OCCP and ERGIS with FGD would contribute less than 0.5 % to the total aqueous (tributary) load to Lake Michigan.

Table 4.18.4-1
Mercury Mass Loading from OCPP, ERGS, and Cumulative Net Loading Lakewide

Source	Mercury to Atmosphere (kg/years)	Mercury added to Lake Michigan via wastewater discharge (kg/year)	Total Mercury to air & water environment (kg/year)
OCPP	56.7-113	0.02	56.7-113
ERGS w/FGD	28.8	0.59	29.4
ERGS wo/FGD	56.7-113	0.005	56.7-113
Lake-wide*	729	186 (tributary)	925
Source: U.S. EPA Lake Michigan Mass Balance Study			

Based on the U.S. EPA Lake Michigan Mass Balance Study, mercury from a system standpoint does not appear to be an ecological or human health problem.

Trans-boundary Impacts
Canadian Environmental Quality Guidelines for the protection of aquatic life limit total mercury to 26 ng/L and 4 ng/L for methylmercury. Water quality criteria for other contaminants of concern are shown in the Canadian Environmental Quality Guidelines Table. (December 2003, http://www.ccme.ca/assets/pdf/e1_062.pdf) Based upon the mercury limitation of 1.3 ng/L and other contaminant limitations imposed by the WPDES permit that has been issued to the Applicant by the WDNR, the proposed project would be consistent with Canadian water quality criteria. As discussed previously, the combined wastewater discharge associated with the proposed project using closed cycle cooling would contain an estimated 224 ng/L of total mercury, which would exceed the Canadian total mercury criterion.

4.18.5 Mitigation and Monitoring

The WPDES permit issued by the WDNR contains monitoring requirements to ensure that the proposed project meets all discharge criteria.

Wastewater Discharges Summary
Discharges to Lake Michigan from the proposed project have been evaluated by the WDNR and determined to meet all applicable criteria. Accordingly, wastewater discharges from the proposed project or its location alternatives would not have a significant impact. However, the proposed project with the alternative to use closed cycle cooling would involve a more concentrated discharge of pollutants in a near-shore environment. This discharge would not meet the WPDES mercury effluent limitation of 1.3 ug/L and could increase the bioavailability of mercury to wildlife in the littoral zone.

4.19 Traffic/Transportation Networks

4.19.1 Existing Conditions

Currently there are about 300 to 350 employees working at the existing OCPP facilities. They work during three shifts over a 24-hour period. There are also about 100 other vehicles that visit the site daily for purposes of making deliveries or equipment maintenance. Assuming no carpooling occurs, this would yield about 800-850 vehicle trips per day on the entrance road into the site and on Elm Road.

Under the 2020 Highway plan adopted by Racine County, Milwaukee County, and the Southeast Wisconsin Regional Planning Commission (SEWRPC), STH 32 would become a four-lane, divided highway up to STH 100. The Milwaukee County portion of this widening would be complete in 2007. Racine County would widen the stretch between Five Mile Road and the Milwaukee County line by 2010. Currently STH 32 is a four-lane highway from Three Mile Road to Five Mile Road. Further south, it continues into the city of Racine, but is still used as four lanes. From Three Mile Road to Four Mile Road there is a fifth (turning) lane. North of Four Mile Road to Five Mile Roads there is a small grass median. From Five Mile Road north, the plan is to make STH 32 a divided highway with some type of grass median. Under the County's current plan, Four Mile Road would remain a two-lane highway west of STH 32. However, this plan is part of the SEWRPC plan through 2020.

4.19.2 Proposed Project and Alternatives

Regional and local traffic volumes would increase as result of the proposed project during the construction phase; roughly 4180 vehicle trips per day are expected during peak activities. The daily traffic is expected to be 1000 to 1500 trips during plant operation. (FEIS, p. xxx)

A study prepared for WEPCO by Benesch Engineering estimated that, in the year 2020, the average daily traffic (ADT) on Seven Mile Road in the year 2020 would be less than 1000 vehicles per day and the ADT on Six Mile Road would be 6000 vehicles per day. (WEPCO submittal 2/25/05)

A new employee access road to the plant from Oakwood Road is proposed. Access to the plant for deliveries and other truck traffic is expected to be via STH 32. Traffic is also likely to increase on nearby arterial roads, to include Ryan Road, STH 32, and Seven Mile Road west of the existing OCPP. (FEIS, p. xxx)

Few changes in waste hauling methods or routes are expected as a result of the proposed project, but there would be an increase in truck traffic. (FEIS, p. xxviii) The North site CUP alternative would involve construction of ash haul roads within WEPCO property.

Traffic Impacts of Plant Operation

Traffic associated with the operation of the proposed plant would be comparable to or less than the construction traffic for the proposed project. Also, long-term employees are

more likely to live near the plant site. Considering these factors, the PSCW described the effects of increased traffic due to plant operation only for STH 32, assuming all units were in operation. Traffic associated with the first SCPC operating while the other SCPC is under construction is included in the estimates for construction traffic. (FEIS, p. 321) Traffic on STH 32 is expected to increase by about six to eight percent from the north and eight to nine percent from the south. For the three to four months of additional traffic during routine maintenance, traffic on STH 32 would similarly increase by about seven to ten percent from the north and ten to eleven percent from the south. (FEIS, p. 323)

The following table shows the estimated increase in traffic for operation of the proposed project. The table shows truck traffic and employee traffic separately, as they would cause different wear on roads. Truck deliveries would mostly occur during the five-day workweek, from about 7 :00 am to 5 :00 p.m. Employees would work around the clock, with the largest number on the day shift.

Table 4.19.2-1
Worst-case increase in traffic due to plant operation

Traffic During Plant Operation (2 units) *	
Traffic source	Vehicle Count
Operating personnel	200 per day (100-150/shift) 400 vehicle trips
Truck deliveries, (assuming all shipments other than coal)	300 vehicles per day 600 vehicle trips
Additional vehicles during routine maintenance (occurs 8-10 weeks annually)	Additional 200 vehicles per day (maximum) 400 vehicle trips
Total traffic	1500 average vehicle trips per day (1400 during annual maintenance)
*Barge delivery during summer months could reduce truck traffic by 30% Source: Adapted from Table 11-17, FEIS p. 319	

4.19.3 Rail Traffic

Coal and limestone could be delivered to the OCPP by ship or rail, but is preferred to be delivered by rail. (FEIS, p. 108) Train lengths are expected to increase from 125 cars per train to 135 cars per train as a result of the proposed project, with 4 additional trains per week, totaling nine coal deliveries by rail each week. (WEPCO submittal 2/25/05). Impacts of hauling coal by train would include increased noise and release of coal dust from the rail cars. (FEIS, p. 91)

4.19.4 Indirect and Cumulative Impacts

The transportation assessment takes into account predicted traffic from all sources in the project area. Cumulatively, the number of trains per week would increase from 9 trains with the proposed project to 11 trains if the IGCC unit were constructed. (WEPCO

submittal 2/25/05). Based on the transportation analysis, impacts to the traffic/transportation network in the project area would not be individually or cumulatively significant.

4.19.5 Mitigation

The Applicant has proposed upgrades to the railroad infrastructure in conjunction with the proposed project that would minimize conflicts between trains and local traffic Specifically, the proposal includes eliminating three at-grade public highway railroad crossings: 1) the at-grade crossing at Elm Road in Oak Creek would be closed to vehicle traffic, 2) the at-grade crossing at Seven Mile Road in Caledonia would be closed to vehicle traffic, and 3) the at-grade crossing at Six Mile Road would be replaced with a vehicle underpass. With the closing of the Seven Mile Road crossing, traffic is expected to use the Six Mile Road crossing. The construction of the underpass at Six Mile Road would therefore result in an estimated decrease of 6000 vehicle crossings of the railroad per day. (WEPCO submittal 2/25/05)

Traffic/Transportation Networks Summary
Traffic increases that would result from the proposed project and its alternatives are not expected to exceed capacity of area roadways nor result in unacceptable levels of service.

4.20 Vegetation Resources

4.20.1 Exist ing Conditions

Most of the OCPP property and surrounding areas was previously cleared for agriculture, industrial, or residential use. The operation of the OCPP and its associated infrastructure (rail corridor, landfills, etc.) has resulted in a patchwork of disturbed areas and pockets of native vegetation including old fields, stands of second-growth mixed hardwood forests, grasslands, and wetlands. A summary of the distribution of these vegetative communities is provided on pages 254-256 of the FEIS. In general, the least disturbed, higher quality resources with predominantly native plant species are found within the SWRPC designated environmental resource areas on the site. Those potentially impacted by the project alternatives include:

PEC-1. PEC-1 is located north of Elm Road and encompassing the area along the lakeshore and bluff top extending westward, north, and south of the North Oak Creek landfill. The area contains an 11.5-acre good quality upland Southern mesic forest and a 0.02-acre arrow grass wetland on the bluff of Lake Michigan, both of which are identified as critical species habitat by SWRPC.

PEC-2. PEC-2 is located south of the OCPP facilities along the lakeshore and bluff top and extending west and south of the federal shooting range. This area includes the 22-acre Ravine Woods Natural Area (RWNA). The RWNA is a diverse Southern mesic hardwood forest that is to home populations of the state-endangered blue-stemmed goldenrod and state-threatened cream gentian.

INRA-1. INRA-1 is located west of the C&NW Railroad tracks and northeast of the active Caledonia ash landfill. Within this INRA, SWRPC has identified an 18-acre woodland designated as critical habitat. Although the area is bisected by Rifle Range road, surveys have documented a diverse plant community in both the northern (55 species) and southern sections (70 species).

INRA-3. INRA-3 is located inside the OCPP rail track. INRA-3 is the largest wooded parcel on the OCPP property (17.5 acres) and is dominated by mature bass and beech trees in addition to 90 other plant species including the state-endangered blue-stemmed goldenrod.

INRA-4. INRA-4 is located at the south end of the rail loop. INRA-4 is a 7.1-acre woodland with several wetlands areas including sedge meadow, wet meadow, and open water.

4.20.2 North Site CUP and North Site Alternatives, Open Cycle Cooling

Vegetation impacts from the North site alternatives would occur primarily at the northern end of the property where the new generating units, coal storage areas, and other infrastructure would be constructed. A total of 56.8 acres of designated corridors would be impacted. Within PEC-1, the woodland area south of Elm Road would be eliminated and the woodland area north of Elm Road would be reduced in size. Also in PEC-1, approximately 5.4 acres of wetland would be lost through the bowl excavation and construction of access roads.

In total, 50.86 acres of the 125.48 acres of PEC-1 would be lost under either of the north site alternatives. Outside of PEC-1, grasslands on and around the ash landfills would be temporarily impacted during construction by using them as construction laydown areas and for soil stockpiles. The Applicant has indicated that these areas would be restored to grassland after completion of the project. Of the remaining higher quality areas identified previously, PEC-2 and INRA-3 would not be affected and INRA-1 would only be slightly impacted (0.17 acre).

4.20.3 Caledonia Alternative, Open Cycle Cooling

The Caledonia alternative would focus the majority of the construction activities to areas south of the OCPP. In total, approximately 23.98 acres of designated corridors would be impacted by the project. Approximately 11.6 acres of PEC-1, including some woodland and a small amount of wetland would be lost. Impacts to INRA-3 and INRA-1 would be largely avoided although INRA-4 and INRA-5 could be impacted more extensively (the impacts to these areas may have been attributable to the previously proposed IGCC unit which has since been dropped as a component of the project). PEC-2 could also be affected along its northern boundary if infrastructure for the two generating units is placed further south (the initial permit application identified 5.24 acres of impact in PEC-2 although this may have been attributable to the IGCC unit). As with the North Site

alternatives, grasslands associated with the existing closed landfills would be temporarily impacted by construction.

4.20.4 North Site CUP and North Site Alternatives, Closed C ycle Cooling

In addition to the impacts identified for the North site alternatives with open cycle cooling, use of closed cycle cooling would result in additional vegetation impacts to gain the additional land needed for cooling towers and additional plant capacity. The Applicant has indicated that an additional 4 to 7 acres of land would be required to install and operate the plant using this technology and that the most likely location to expand the footprint of the plant would be to the north. The areas north of the proposed bowl excavation are part of PEC-1. The expansion into PEC-1 would further impact the wooded area north of Elm Road as well as the remaining portion of wetland R-22b and wetlands R-15A, R-16, R-17, R-19, and R-20. No other areas of the site would be impacted under this alternative.

4.20.5 Caledonia Alternative, C losed Cycle Cooling

The impact assessment for closed cycle cooling at the Caledonia site assumed that the land south and west of the proposed powerblock would be used to site the cooling towers. In addition to the impacts discussed for the Caledonia site with open cycle cooling, additional portions of PEC-2, INRA-4, and INRA-5 would be impacted. Impacts to PEC-2 would be on the northern portion of the corridor in the wooded area adjacent to the bluff extending south towards the rifle range property. An estimated 4 to 6 acres of this area could be impacted. INRA-4, located west of the proposed bowl excavation and east of the rail loop would most likely be completely eliminated resulting in a net loss of 7.12 acres. The eastern half of INRA-5 could also be impacted although specific designs would need to be prepared to fully evaluate the potential impacts. No other areas of high quality vegetation would be impacted under this alternative.

4.20.6 I ndirect and Cumulative Impacts

The alternatives presented would impact between 24 and 64 acres of designated environmental corridors depending on the site and the type of cooling technology employed. Additional incremental losses would be anticipated if, in the future, the Applicant received approval to construct a third generating unit at the site. The additional impacts would be minimal for the north site and slightly more for the south site as the footprint encroaches on northern boundary of PEC-2. These impacts represent between seven and twenty percent of the total designated corridors on the site.

Cumulatively, the loss of these areas is not considered to be a significant effect. Based on numbers compiled by SEWRPC, the region has experienced a net increase of 0.7 square miles (0.7 percent) of Primary Environmental Corridors over the ten-year period from 1990 to 2000. Isolated Natural Resource Areas have decreased in size over the same period by 0.4 square miles (0.6 percent). The loss of these additional areas would not substantially change these trends in either direction and would not signify the loss of

any recognized sensitive species or habitat type. Further, in the future with-project condition the areas identified for onsite wetland mitigation may be added to the SEWRPC designated areas and could offset the direct impacts of the project.

4.20.7 Mitigation

The Applicant has completed and/or proposed the following measures to reduce impacts to native vegetation for the project alternatives.

- Avoidance and minimization of impacts to designated natural areas on the OCPP through project modification and redesign.
- Restoration of grassland areas following construction.
- Restoration and enhancement of upland buffers and wetlands as compensatory mitigation for unavoidable impacts to wetlands.

Vegetation Impacts Summary
The Applicant has revised the project design as much as possible to avoid areas of high quality native vegetation and minimize unavoidable impacts. While not directly intended to offset impacts to upland vegetation, the seventy acres of upland buffers and wetland restoration and enhancement proposed for the project would offset the loss of some of these designated environmental areas. The loss of designated high quality environmental corridors and natural areas at the OCPP would be an adverse effect for any of the project alternatives but is not considered significant.

4.21 Visual Impacts

4.21.1 Exist ing conditions

The visual environment in the area surrounding the OCPP project area includes wetlands/woodlands, farmlands, residences, and trails. (FEIS, p. 345) Electric transmission lines are also a strong element in the visual landscape surrounding the OCPP project area. The existing OCPP as a whole is visible from the lake and lakeshore. The OCPP exhaust stacks are visible as a remote feature on the horizon from the northern boundary of WEPCO-owned land (Elm Road and Barton Road), and the southern boundary (Seven Mile Road). To the west, along STH 32, there are some areas where the stacks are not visible due to the rolling topography. Figures 11-10 to 11-18 in the FEIS (pp. 347-351) show some of these visual features surrounding the project area.

Due to the distance and the landscape features between the viewer and the stacks, the visual impact of the stacks outside the OCPP property is minimal. In comparison, the existing electric transmission lines throughout the area surrounding the OCPP and the existing LNG tank on Elm Road are more dominant visual features. (FEIS, p. 406)

Light pollution is prevalent along the coast of Lake Michigan in the project area, and extends from Chicago to Milwaukee along the lake. (FEIS, p. 346).

4.21.2 Potentia l Visual Impacts

Potential aesthetic impacts associated with the proposed project and its alternatives would include changes to the visual landscape as viewed from the lake, lakeshore, and the surrounding land area. Changes would occur due to excavation of the bluff, addition of buildings and other plant facilities, additional lighting, and changes in the location and composition of emissions from the facility.

For the proposed project, eight of the new buildings or plant components would be slightly over 100 feet tall; one would be 150 feet tall; one about 200 feet tall; and two almost 300 feet tall.

Visual Impact of Exhaust Stacks
The new exhaust stacks for the ERGS could be higher and larger in diameter than the existing OCPP stacks, depending on the alternative selected. The exhaust stacks would be the tallest features of the proposed project. The exhaust stacks are shorter for the Caledonia Site alternative to avoid interference with navigation related to the John H. Batten Airport in Racine County. (FEIS, p. 351) The exhaust stacks are shorter for the North Site CUP alternative due to negotiations with the City of Oak Creek. (FEIS, p. 391) Table 4.21.2-1 shows the difference in exhaust stack heights and diameters for the proposed project and alternatives.

Table 4.21.2-1
Comparison of Alternative Stack Heights

No. Of Stacks & Stack Height	Existing units 5 & 6*	Existing units 7 & 8*	North Site	North Site CUP	Caledonia Site
	1 stack 454 feet	1 stack 557 feet	2 stacks 675 feet	1 stack 550 feet	2 stacks 470 feet
Stack Diameter	44.6 feet at the base	46 feet at the base	60 feet at the base of each	About 75 feet at the base	60 feet at the Base of each

* These stacks would be present for all project alternatives
Source: adapted from FEIS Table 12-4, p. 406

Stack height was not a major aesthetic concern for residents at the public meetings held for the PSCW and WDNR draft FEIS. However, residents expressed concern regarding increased air pollutants and how far these pollutants would disperse from the plant. (FEIS, p. 406)

Visual Impacts of Lighting
Due to the vicinity of the proposed project to General Mitchell International Airport in Milwaukee and the John H. Batten Airport in Racine County, lighting is required for all structures over 200 feet tall in the OCPP project area. For the proposed project, there would be two buildings, one transfer tower, and four exhaust stacks over 200 feet tall. (FEIS, p. 355)

The Applicant proposes medium intensity lighting for the proposed structures over 200 feet in height. To meet the FAA requirement that all marking/lighting meet the standards in FAA Advisory Circular 70/7460-1 K Chg 1, all four top corners of the boiler buildings would be lighted. The proposed stacks may require a dual system with white medium-intensity strobe lights operating during daylight hours with red lights in use at night. Lights would be spaced 90° apart within 20 feet of the top of the stacks and at about the mid-height elevation of the stacks. (FEIS, p. 355)

Visual Impact of Stack Emissions
Under certain meteorological conditions, the proposed exhaust stacks would emit a visible steam plume that would dissipate after traveling a relatively short distance from the stack. The plume would be more persistent during times of low ambient air temperature, high ambient humidity, and low wind speed.

Additionally, some of the air emissions from the proposed ERGS operation, such as particulate matter, Ox, and SO_2, have the potential to impact local and regional visibility. Ox and SO_2 emissions react in the atmosphere to form sulfate and nitrate compounds, which condense as very fine particulate matter and can cause visibility impairment. However, the PSCW and WDNR found in their analysis, that these emissions would be a small fraction of the annual statewide emissions and would not have a significant visual impact. (FEIS, p. 171)

Differences in Visual Impacts among the Location Alternatives:
Visual impacts associated with the proposed exhaust stacks would occur to a lesser degree for the North Site CUP and Caledonia site due to shorter exhaust stack heights. In addition, there would be differences in local viewsheds for the location alternatives. Differences in visual impacts among the North Site and North Site CUP alternatives are discussed in detail in the PSCW and WDNR FEIS, Chapter 12. (FEIS, pp. 406-408)

Visual Impacts Associated with Cooling Towers
If closed cycle cooling were used at any of the location alternatives instead of open cycle cooling, there would be an additional visual impact due to the water vapor plume that is emitted from the cooling towers. Assuming the use of a mechanical draft cooling tower, it is estimated that there would be 2 towers, each between 60 to 70 feet tall, with a steam plume rising upward between 350 and 3900 feet, varying by wind speed and season. The water vapor plumes are estimated to reach a final height up to 1.2 miles away from the plant. (Sargent & Lundy report, Appendix D, p. 8&11)

The steam plume could be visible for several miles, depending on conditions such as wind speed and direction. (WEPCO Submittal 12/7/04) From a visual standpoint, the addition of the cooling tower structures would generally blend with the existing plant structures and other structures associated with the proposed expansion. However, the vapor plume resulting from operation of the cooling towers would be a distinct change from existing conditions.

The large plumes of water vapor associated with cooling towers can cause misting, fogging and icing at ground level during cold weather. For mechanical draft cooling towers, these effects are generally limited to within 1000 to 2000 feet of the towers. Cooling towers located within the OCPP would be a sufficient distance from the nearest highways to avoid exposure to fog or icing. (Sargent & Lundy report, Appendix D, p. 4&10). (WEPCO Submittal 12/7/04)

Vapor plumes from cooling towers are a source of particulate matter of 10 microns or less (PM10). Deposition of this particulate matter is expected to occur between 350 and 1,000 feet from the towers. (Sargent & Lundy report, Appendix D, p. 12)

Cooling tower plumes could also be a hazard to aviation since one of the flight paths to General Mitchell International Airport (7.8 miles north-northwest of the plant site) is north – south over Oak Creek crossing near the proposed plant site. (WEPCO Submittal 12/7/04)

4.21.3 Indirect and Cumulative Impacts

If and when the IGCC unit is needed, the additional structures would contribute to the visual impacts of the proposed project. The tallest of the IGCC facilities would be about the height of the main SCPC buildings. For the IGCC stacks, the Applicant would likely use four 24-hour white medium intensity strobe lights spaced 90° apart and placed within the top 20 feet of the stack. (FEIS, p. 355)

The facility having the greatest visual impact would likely be the flare on the IGCC unit, because of its size and the absence of another object like it in the site area. (FEIS, p. 352) The IGCC flare would burn waste gases from the coal gasification process. It would operate during plant start-up, which takes about two days, and it would operate during certain types of equipment malfunction. The flare would not be in use during normal plant operation. At night, the flame would be blue in color and similar to a hydrogen flame when in use. A small pilot light would be kept burning when the plant is in service but it is not expected to be noticeable. (FEIS, p. 353)

Figure 11-19 in the FEIS shows a flare at the Wabash IGCC plant, taken during a startup of the plant at night. (FEIS, p. 354) This incremental addition to the visual impacts of the proposed project is not expected to be cumulatively significant.

4.21.4 Mitigation

Screening Berms

The Applicant would create berms at strategic places on the OCPP property to screen the proposed facilities from view. Figure 11-20 in the PSCW and WDNR FEIS shows how berms and woods screen the existing plant facilities from the Barton Oaks neighborhood located in the background near the liquid natural gas tank. (FEIS, p. 357)

For the North Site CUP alternative, visual screening berms are proposed at the following locations: behind Haas Park, to the south of the Barton Oaks Subdivision; at both ends of

Haas Park; running north and south along the rail tracks, to the east of the Barton Oaks Subdivision; along and to the south of Oakwood Road; and inside the rail loop. (FEIS, p. 356) Figures Vol. 2-1 through 2-3 in the PSCW and WDNR FEIS show the location of the berms proposed for the North Site CUP alternative.

Vegetative Screening
There is sufficient area between the OCPP facilities and the local community to allow the Applicant to use plantings, either on OCPP property or on neighboring properties, to provide a visual screen for the plant. (FEIS, p. 357)

Building exterior and landscaping
The Applicant intends to involve the surrounding community in selecting final design details for the appearance of the buildings and boundary landscaping. The features viewed most frequently by the community are the gatehouses. The Applicant has indicated that attractive gatehouses with landscaping would be constructed at the Oakwood Road and Highway 32 entrances. (FEIS, p. 357)

Visual Impacts Summary
Because this is an expansion of an existing plant, facilities would be placed at the base of the bluff, and visual screening in the form of berms and vegetation have been incorporated into the proposal, no significant aesthetic impacts are anticipated as a result of the proposed project or its alternatives.

4.22 Wetland Resources

4.22.1 Exist ing Conditions

The SEWRPC, WDNR, and private consultants retained by the Applicant delineated the wetlands within the permit area during 2002 and 2003. The wetlands identified during the delineation were grouped into two categories based on their location within the permit area. The first group is comprised of wetlands located on the OCPP property while the second group contains those wetlands adjacent to the mainline rail corridor, which extends south of the OCPP. Each group is discussed independently in the following paragraphs.

Oak Creek Power Plant Property
A total of 85 wetlands totaling 83.2 acres were delineated on the Oak Creek Power Plant property (Excel Spreadsheet sheet labeled Wetland June 3, 2003). The majority of the wetlands (76 of 85) are less than two acres in size and account for 33.5 of the total 83.2 wetland acres on the property. The remainder of the wetland area (approximately 50 acres) is attributable to nine wetlands ranging in size from 2.2 acres to 12.1 acres. Wetlands on the property were delineated according to the 1987 Corps of Engineers Wetlands Delineation Manual and classified per Eggers and Reed (1997). In general, the site contains a variety of wetland types including shrub-carr, hardwood swamp, fresh (wet) meadow, shallow marsh, deep marsh, and sedge meadow.

Information on the size, classification, and location of each wetland is provided in the Wetlands and Environmental Corridor Tab of WE Energies *Joint State/Federal Application for Water Regulatory Permits and Approvals Supplemental Information, Elm Road Generating Station* (December 2003).

The functional quality of each wetland on the property was assessed following the *Rapid Assessment Methodology for Evaluating Wetland Functional Values* (RAM-WDNR, 1994). The Rapid Assessment Methodology, or RAM, assigns an overall indicator of quality (Low, Medium, High) to eight wetland functions including floristic quality, wildlife habitat, fishery habitat, flood/stormwater attenuation, water quality protection, shoreline protection, groundwater, and aesthetic/recreation/education (It should be noted that the Corps did not utilize the results of the assessment for the aesthetic/recreation/education function in its impact analysis).

The assessment included both a "short" form and a "long" form. The long form is a more comprehensive analysis and was used to evaluate wetlands lying within Primary Environmental Corridors or Isolated Natural Resource Areas as defined and delineated by SWRPC. The results of the functional assessment are contained in WE Energies *Joint State/Federal Application for Water Regulatory Permits and Approvals Updated Application, Elm Road Generating Station Volume 3* (July 2003).

In general, the majority of wetlands outside of the Primary Environmental Corridors or Isolated Natural Resource Areas on the OCPP property are of low or medium functional value. These wetlands show signs of physical disturbance and an altered hydrologic regime and are frequently dominated by non-native, invasive species such as reed canary grass (*Phalaris arundinacea*) or giant reed grass (*Phragmites australis*). As a result, functional ratings for floristic diversity, habitat, and hydrologic function are typically rated low.

The highest quality wetlands on the property are found within the Primary Environmental Corridors or Isolated Natural Resource Areas on the OCPP property. Of the wetlands with at least one high functional rating (as determined using the RAM), three were determined to have six or more High ratings or at least one exceptional rating, seven were found to have between 3 and 5 high ratings, and 31 had one or two high ratings. The high quality wetlands are summarized in Table 4.24-1. Information on the type and size of the high quality wetlands can be found in WE Energies *Joint State/Federal Application for Water Regulatory Permits and Approvals Updated Application, Elm Road Generating Station Volume 1, Wetlands and Environmental Corridors Tab* (July 2003).

One unique wetland community is found on the OCPP property. Wetland R-22b is located on, and along, the bluff adjacent to Lake Michigan. The hydrology source for this 3.62-acre wetland is groundwater seeps that discharge from the eroding clay slope. This source of water produces shallow marsh and fen-like plant assemblages down the slopes of the bluff. This wetland may represent the largest wetland of this type in the region although its size may be the result of the protection from wave action afforded by

the fillet beach that has formed north of the OCPP coal storage dock. The wetland was rated high for floristic diversity but contained no Federal or state protected species. The unique character of the wetland is attributable primarily to its hydrology source and position in the landscape.

The site contains four other seep wetlands located on the eroding bluff adjacent to Lake Michigan north of wetland R-22b. These wetlands are much smaller in size, ranging from less than 0.1 acre to 0.40 acre, and were not determined to be functioning at a high level.

Table 4.22-1
Summary of High Functioning Wetlands on the Oak Creek Power Plant Property

Functional Rating	Description	Wetlands
Very High	At least one exceptional functional rating or 6 or more high functional ratings	W1, R22a, R22b
Medium-high	Between 3 and 5 high functional ratings	W3, W11, R14, R32, R42a, R42b, R53
Low-high	1 or 2 high functional ratings	W4, W5, W7, W9, W10, W11, W12, W13, W14, W20, W22, W23, W25, W26, W52, W55, W56, R2, R4, R5, R6, R15a, R15b, R23, R26, R28, R29, R34, R35, R36, R54

Mainline Rail Corridor
The mainline rail corridor extends from the intersection of Rifle Range Road south to Five Mile Road. A total of 25 wetlands totaling approximately 11 acres were identified along the rail corridor. Most of the wetlands are hydrologically connected to drainage ways and wetlands outside of the railroad corridor. Community types include shallow marsh, fresh (wet) meadow, shrub carr, and sedge meadow.

Overall, the wetlands in this portion of the permit area are of low to medium quality although the two largest wetlands along the corridor (W-44 and W-47), did receive high functional ratings for floral diversity. The majority of the wetlands is highly disturbed and exists in a functionally depressed condition most likely attributable to the presence of the trackside ditches and periodic maintenance activities. The degree of disturbance has allowed many non-native invasive species to become established and out compete native wetland plants.

4.22.2 Wetland Impacts

The following wetlands impact assessment is based upon information provided by WE Energies. Impact calculations for the North Site CUP alternative are as reported by WE Energies in their testimony for the WDNR Chapter 30 contested case hearings in August 2004. The calculations contained therein reflect changes to the project design that were completed subsequent to the submittal of the original permit application in July 2003.

Impact calculations for the other site alternatives with once-through cooling are as reported in *Joint State/Federal Application for Water Regulatory Permits and Approvals Supplemental Information, Elm Road Generating Station* (July 2003) except as noted in the assessment for each project alternative. Some revisions to these assessments were made to account for changes in design for the North Site CUP alternative that were applicable to all project alternatives and the removal of the IGCC unit from the project purpose.

Impact assessments for the site alternatives with closed cycle cooling were completed using the impacts for the once-through cooling as a base and then estimating additional impacts based on information provided by the Applicant regarding the additional plant size required for this type of cooling technology. Assumptions and/or revisions to the original impact assessments are provided in the discussion for each alternative.

4.22.3 North Site CUP Alternative, Open Cycle Cooling (Proposed Project)

The North Site CUP Alternative would impact a total of 23.46 acres of wetlands. This number includes 13.69 acres of wetlands on the OCPP property and 9.7 acres of wetlands along the rail corridor. Impacts to wetlands for construction of the new generating units would be concentrated in the areas north, northeast, and east of the existing OCPP including the bluff along Lake Michigan north of Elm Road.

Applying the results of the wetland functional assessment, this alternative would impact 10 acres of high quality wetland (as defined in Table 4.24-1). These impacts include 5.78 acres of very high quality wetlands, 0.34 acre of medium-high quality wetlands, and 3.89 acres of low-high quality wetlands. These impacts are briefly discussed in the following sections:

Very High Quality Wetlands. Construction of the North Site CUP alternative would impact wetland W-1, wetland R-22a, and wetland R-22b. Wetland W-1 is located on the west side of the railroad tracks and south of the existing ash disposal landfill. This wetland was rated exceptional with respect to floral diversity and high for wildlife habitat, flood/stormwater attenuation, and water quality protection. Construction of the new Main Access Road would result in the loss of 1.01 acres of the northern edge of this wetland. Wetlands R-22a and R-22b are located north of Elm Road along the Lake Michigan bluff and extend approximately 1,600 feet inland. Both of these wetlands were rated high for six of the seven functions assessed using the WDNR RAM and together account for 4.77 acres of the total 5.78 acres of impact to the highest quality wetlands within the permit area. They contain regionally rare spring seepages on eroding clay bluffs that support shallow marsh and fen-like plant assemblages.

Other wetland types present at this location include deep and shallow marsh, fresh (wet) meadow, and southern wet to wet-mesic lowland hardwoods (PSCW Final Environmental Impact Statement, July 2003). Construction of the bowl for the additional

generating units would impact all of wetland R-22a (2.46 acres) and 2.31 of 3.63 acres of wetland R-22b.

Medium-high Quality Wetlands. Two medium –high quality wetlands would be impacted for infrastructure improvements at the site. Construction of the public access road from the north side of the site to the discharge structure would impact 0.22 acre of the total 1.09 acres of wetland R-14. The road would require fill to be placed along the western edge of this wetland. Wetland R-14 is a headwater area for a small unnamed tributary to Lake Michigan. It contains southern sedge meadow, open water, lowland hardwoods, and shallow marsh wetland communities. The rail yard improvements would result in the complete filling of wetland R-53. This wetland is located south of the existing rail loop and north of the federal rifle range property. Wetland R53 is an isolated open water area.

Low-high Quality Wetlands. As indicated in Table 4.24-1, this category of high quality wetlands encompasses those found to have one or two high functional ratings. A total of 3.89 acres of low-high rated wetlands would be impacted for construction of the Elm Road Generating Station under this plan. Nine wetlands with low-high quality ratings would be either completely (R-23 and R-28) or partially filled (R15b, R-29, R-36, W-7, W-44, W-47, and W-52). The impacts to these wetlands are concentrated at the southern boundary of the proposed rail loop (0.25 acre of R-28 and 1.39 acres of R-29) and along the mainline rail corridor south of the OCPP property (0.99 acre of W-44 and 0.71 acre of W-47). The remainder of the wetland impacts for this category are associated with infrastructure improvements across the site.

4.22.4 North Site Alternative, O pen Cycle Cooling

The Applicant did not submit revised wetland impact assessments for the North Site alternative since no specific design modifications were performed for this option subsequent to the PSCW CPCN issuance. However, to provide a fair and objective comparison of the alternatives, the Corps has made minor revisions to the impact assessments submitted in July 2003. The revisions were made for the North Site CUP alternative but were determined by the Corps to be equally applicable to the North Site alternative. These modifications included:

1. Correcting the mathematical error for the wetland impacts associated with the railroad corridor. The number has been changed from 8.93 acres to 9.77 acres.

2. Reducing the impact to wetland R-22b from 2.71 to 2.31 in response to design modifications to further minimize impacts from the bowl excavation and fishing access pier.

3. Reducing the impacts to wetland W-1 from 1.3 to 1.01 and wetland W-7 from 0.088 to 0.059 in response to design changes to further minimize impacts from construction of the main access road.

The North Site Alternative would impact a total of 20.96 acres of wetlands. This number includes 11.19 acres of wetlands on the OCPP property and 9.77 acres of wetlands along the rail corridor. Impacts to wetlands for construction of the new generating units would be concentrated in the areas north, northeast, and east of the existing OCPP including the bluff along Lake Michigan north of Elm Road.

Applying the results of the wetland functional assessment, this alternative would impact 9.37 acres of high quality wetland. These impacts include 5.78 acres of very high quality wetlands, 1.66 acres of medium-high quality wetlands, and 1.94 acres of low-high quality wetlands. These impacts are briefly discussed in the following sections:

Very High Quality Wetlands. The impacts would be the same as those described for the North Site CUP Alternative.

Medium-high Quality Wetlands. Construction of the south access road would result in the discharge of fill material into 1.66 acre of wetland in this category. The impact would be confined to wetland R-32 and would bisect the wetland leaving a small segment north of the road and a larger segment to the south. The two remaining pieces would constitute 2.16 acres. It is anticipated that the functional capacity of the remaining wetland would decrease as a result of being separated and would constitute an additional adverse secondary effect.

Low-high Quality Wetlands. A total of 1.94 acres of low-high rated wetlands would be impacted for construction of the Elm Road Generating Station under this plan. Five wetlands with low-high quality ratings would be either completely (R-23) or partially (W-7, R-36, W-44, and W-47) filled. The majority of the impacts in this category would occur at wetlands W-44 (0.99 acre) and wetland W-47 (0.71 acre). These wetlands are located adjacent to the rail corridor south of Rifle Range Road.

4.22.5 Caledonia Alternative, Open Cycle Cooling

As with the North Site alternative, the following revisions were made to the wetland impact assessments in the July 2003 permit application:

1. Correcting the mathematical error for the wetland impacts associated with the railroad corridor. The number has been changed from 8.93 acres to 9.77 acres.

2. Reducing the impacts to wetland W-1 from 1.3 to 1.01 and wetland W-7 from 0.088 to 0.059 in response to design changes to further minimize impacts from construction of the main access road.

3. Wetland impacts associated with construction of the third generating unit were removed from the impact assessment. This affected the impacts previously identified for wetlands R-34 (0.481 acre), R-57 (0.266 acre), R-56 (0.027 acre), R-55 (0.199 acre), and R-53 (0.114 acre).

The Caledonia Alternative would impact a total of 16.86 acres of wetlands. This number includes 7.09 acres of wetlands on the OCPP property and 9.77 acres of wetlands along the rail corridor. Impacts to wetlands for construction of the new generating units would be concentrated in the areas south and southwest of the existing OCPP including the bluff along Lake Michigan south of the existing units.

Applying the results of the wetland functional assessment, this alternative would impact 5.39 acres of high quality wetland. These impacts include 1.79 acres of very high quality wetlands, 1.66 acres of medium-high quality wetlands, and 1.94 acres of low-high quality wetlands. These impacts are briefly discussed in the following sections:

Very High Quality Wetlands. Construction of the Caledonia Site alternative would impact 1.01 acres of wetland W-1, and 0.78 acre of wetland R-22a. The impacts to wetland W-1 would be identical to those described for the North Site CUP. Impacts to wetland R-22a would affect 0.78 acre of the 2.46 acre total and would occur along the western edge of the wetland. A brief characterization of wetland R-22a is included under the North Site CUP alternative.

Medium-high Quality Wetlands. One wetland in this category would be impacted under this alternative. Impacts to wetland R-32, would be identical to those described for this wetland under the North Site alternative (1.66 acres of fill).

Low-high Quality Wetlands. A total of 1.94 acres within five delineated low-high quality wetlands would be impacted under this plan. These wetlands include: W-7, R-23, R-36, W-44, and W-47. In general, the majority of the impacts would occur through the partial filling of wetlands W-44 (0.99 acre) and W-47 (0.71 acre) along the rail corridor south of Rifle Range Road.

4.22.6 North Site CU P and North Site Alternatives, Closed Cycle Cooling

At the request of the Corps, the Applicant conducted a qualitative analysis of the impacts to wetlands associated with using closed cycle cooling instead of open cycle cooling (*Comparison of Open Cycle and Closed Cycle Cooling Technologies for the ERGS Project*, WE Energies, December 2004). The Applicant estimates that use of closed cycle cooling would increase the footprint of the plant by 4 to 7.3 acres depending on the type of technology used (4 acres for a multi-cell cooling towers and 7.3 acres for mechanical draft cooling towers similar to those used at the Applicant's Pleasant Prairie plant).

For the North Site alternatives, the cooling towers would need to be located immediately north of the bowl excavation for the ERGS powerblock. This would result in the additional loss of 1.8 acres of wetlands including the remaining portion of wetland R-22b and wetlands R-15A, R-16, R-17, R-19, and R-20. Most critical among these are the additional impacts to R-22b (1.32 acres), a very high quality wetland fed by seeps on the bluff of Lake Michigan and the loss of wetland R-15a, a 0.33 acre lowland hardwood wetland rated low-high during the functional assessment. These additional impacts

would bring the total wetland impacts for the North Site CUP with closed cycle cooling to 25.26 acres and the North Site to 22.76 acres.

4.22.7 Caledonia Alternative, Closed Cycle Cooling

The impact assessment for closed cycle cooling at the Caledonia site was performed by the Corps and assumed that the land south and west of the proposed powerblock would be used to site the towers. There are five wetlands identified in this area. They are: R-34 and R-57 located near the bluff along Lake Michigan and wetlands R-53, R-55, and R-56 located west of the proposed powerblock. It was assumed that all of these wetlands would be filled under this scenario. This would result in the additional loss of 1.09 acre of wetlands.

Most critical among these additional impacts would be the loss of and wetland R-53, a 0.11-acre open water area with a medium high functional rating and wetland R-34, a 0.48-acre shallow marsh rated low-high during the functional assessment. The additional impacts would increase the total loss of wetlands under the Caledonia alternative to 17.95 acres.

4.22.8 Indirect and Cumulative Impacts

Construction of a third additional generating unit at the OCPP property is considered a reasonably foreseeable future action given the infrastructure to accommodate such an upgrade would be constructed as a component of the proposed project. The design plans prepared by the Applicant in their July 2003 permit application disclosed the anticipated impacts to wetlands resulting from a third generating unit. For the north site alternatives the additional unit would be constructed in approximately the same location as former units 1-4 at the OCPP and would not impact any additional wetlands. At the Caledonia site, the additional unit would be placed south of the proposed bowl excavation. Depending on the final design of this arrangement, the additional unit could result in additional impacts of up to 1 acre.

The Corps utilized information from its own permit database and information compiled by the SEWRPC to assess the cumulative effects of the proposed project on wetland resources. The geographic area of the cumulative assessment was a drainage basin approximately 12,000 acres in size that drains to Lake Michigan. The basin extends from the mouth of Oak Creek at the north end, in the vicinity of Montana Avenue, to just north of the mouth of the Root River, in the vicinity of High Street, at the south end. The drainage basin is shown on Figure 4.22.8-1.

The Corps reviewed permit actions from approximately 1982 through the present to find records of authorized discharges of fill material into wetlands. The database search revealed that the Corps has issued fourteen permits authorizing 11.66 acres of wetland fills within this drainage basin. The impacts ranged in size from 0.03 acre to 3.5 acres and were not identified by wetland type.

The Corps also used the permit database to identify wetland gains in the form of on-site compensatory mitigation or establishment of mitigation banks. This search identified two mitigation sites within the drainage basin totaling 4.31 acres. This resulted in a net loss of 7.35 acres of wetlands within the watershed based on Corps permit data. It should be noted that this figure does not take into account losses or gains resulting from the following: exempt activities, non-reporting wetland fills, unauthorized fills, fills that occurred prior to the initiation of the Section 404 Regulatory program, natural conversions from non-wetlands to wetlands, and some wetland restoration activities.

In addition, this analysis did not take into account compensatory mitigation for authorized impacts within the watershed that may have been mitigated outside the watershed. While not preferred, this practice is allowed in order to compensate for unavoidable wetland losses.

As an additional tool to assess cumulative effects, the Corps reviewed wetland data provided by the SEWRPC. Utilizing the same geographic area, SEWRPC wetland mapping from 1985 was compared with their 2000 data. According to SEWRPC, in 1985 the watershed contained 249.92 acres of wetlands compared with 301.94 acres of wetlands in 2000, indicating a net increase of 52.02 acres. While not impossible, the Corps believes that such a gain in a fifteen-year period would be unlikely in an urbanizing area, particularly since Corps permit data contradicts this trend.

The reported gain in wetland acreage could more likely be the result of more comprehensive identification and mapping efforts. For purpose of this cumulative impact analysis, the Corps has chosen to use its own permit data to assess the cumulative effects of the proposed project.

Wetland impacts from the proposed project and reasonable alternatives range from 16.86 acres to 25.26 acres with most of these impacts occurring in the previously described watershed boundaries. The Applicant has provided a wetland mitigation plan that proposes to restore and enhance 36.28 acres of wetlands with approximately 13.63 acres (7.79 acres of restored wetlands and 5.84 acres of enhanced wetlands) taking place within the watershed (see the following section on Mitigation).

Figure 4.22.8-1 Geographic Area of Cumulative Impact Assessment

The remaining 22.65 acres would be completed on-site but would be west of the watershed divide in the Root River watershed. Although the project, including compensatory mitigation, would result in a net loss of acres of wetlands in the watershed where the impacts would occur, the Corps has determined that the proposed wetland plan is consistent with national guidance on wetland mitigation, adequately replaces lost wetland functions, and would not represent a significant adverse cumulative effect. This determination is based on the following:

(1) The Applicant has worked with state and Federal agencies to identify potential wetland mitigation sites with the highest likelihood of success and greatest potential benefits.

(2) The identification process examined potential sites within the watershed first and then looked outside the watershed when suitable locations were not found. Mitigation sites outside of the watershed have been located as close as possible to the impact site and are generally within a mile radius of the impact. This process is consistent with the procedures outlined in the *Guidelines for Wetland Compensatory Mitigation in Wisconsin.*

(3) The mitigation is consistent with the national no net loss policy and, when performance standards have been met at the mitigation sites, there would be a net gain in wetland function over the existing condition.

(4) The mitigation includes measures that specifically address the loss of the high quality seep wetlands along the Lake Michigan bluff and provide compensation for these impacts within the watershed.

4.22.9 Mitigation

The Applicant has provided two wetland mitigation plans to offset unavoidable impacts that would result from construction of the proposed project. One plan specifically addresses mitigation to offset the loss of 2.31 acre of seep wetland (R-22b). The plan includes preservation of similar type wetlands adjacent to Lake Michigan and a combination of wetland restoration and enhancement around wetlands W-20 and W-21 on the OCPP property. The mitigation would result in 7.0 credits. The second plan addresses the remainder of the wetland impacts. The plan would result in: (1) restoration of 13.21 acres of shallow marsh, deep-shallow marsh, wet sedge meadow, and shrub carr; (2) enhancement of 17.97 acres of existing shallow marsh, deep-shallow marsh, wet sedge meadow, shrub carr, and hardwood swamp; and, (3) enhancement/establishment of 39 acres of upland buffers consisting of mesic woodland and tallgrass prairie. Successful implementation of this plan would result in 31.5 credits. The Corps has determined this proposal would be consistent with the *Guidelines for Wetland Compensatory Mitigation in Wisconsin* and would offset the unavoidable impacts to wetlands at the site.

Wetland Impacts Summary
The wetland impacts associated with each of the three alternatives are summarized in Table 4.24-2. On both an acreage and functional basis, the Caledonia alternative with open cycle cooling has the least impact. The North Site CUP Alternative with closed cycle cooling has the greatest total wetland impact and greatest impact to high quality wetlands on the property.

The Applicant's proposal to compensate for the wetland impacts associated with the proposed project includes 36 acres of wetland restoration and enhancement, and 39 acres of upland buffer enhancement/establishment. This proposal would be consistent with the *Guidelines for Wetland Compensatory Mitigation in Wisconsin* and would offset the unavoidable impacts to wetlands at the site.

Table 4.22-2
Summary of Wetland Impacts for Reasonable Alternatives

Alternative	Total Wetland Impacts (acres)	Low to Medium Function Wetland Impacts (acres)	Total Impacts to High Function Wetlands (acres)	Impacts to High Function Wetlands		
				Exceptional Rating or 6 or More High Ratings (acres)	3 to 5 functions rated high (acres)	1 to 2 functions rated high (acres)
Site Alternatives with Open Cycle Cooling						
North Site CUP	23.46	13.46	10.0	5.78	0.34	3.89
North Site	20.96	11.59	9.37	5.78	1.66	1.94
Caledonia	16.86	11.47	5.39	1.79	1.66	1.94
Site Alternatives with Closed Cycle Cooling						
North Site CUP	25.26	13.61	11.65	7.1	0.34	4.22
North Site	22.76	11.74	11.02	7.1	1.66	2.27
Caledonia	17.95	11.97	5.98	1.79	1.77	2.42

4.23 Wildlife Resources

4.23.1 Exist ing Conditions

The OCPP property contains a sizeable amount of land not directly utilized for the operation of the OCPP generating units. While many of the areas have been disturbed by past agricultural, residential, or industrial practices, the site does contain several habitat types that support both resident and migratory wildlife. These include old-field, woodland, grassland, wetlands, riparian corridors, and lakeshore. A list of wildlife that may be found in proximity to the site is provided on pages 256-261 of the FEIS. Wildlife resources associated with lacustrine habitats of Lake Michigan are discussed in Section 4.4 of this EA.

In addition to vegetation communities, the SWRPC has identified and mapped high quality and/or valuable biological areas at the site. These areas, relative to other areas of the site, are assumed to provide higher quality wildlife habitat and could be used as a

surrogate for assessing direct impacts to wildlife from the project alternatives. The SWRPC designated biological areas and their extent on the OCPP property are described in the following paragraphs.

Primary Environmental Corridors. Environmental corridors are linear habitat areas that provide general habitat as well as link larger blocks of habitat together. SEWRPC describes primary environmental corridors (PECs) to include a wide variety of the most important natural resource and resource related elements. PECs are at least 400 acres in size, two miles long and 200 feet wide. The OCPP property contains two large blocks of PEC totaling 200 acres. The two segments are part of a larger PEC that runs along the Lake Michigan shoreline. PEC-1 is located north of the existing OCPP and encompasses the area north of the retired OCPP units 1-4 to Bender Park. The area also includes the large wetland complex north and east of the North Landfill. PEC-2 occupies the area south of the existing OCPP units along the shoreline and extends beyond the Applicant's property. This area also includes the Ravine Woods Natural Area south of the federal rifle range.

Natural Areas. Natural areas are tracts of land or water so little modified by human activity, or sufficiently recovered from the effects of such activity, that they contain intact native plant and animal communities believed to be representative of the landscape before European settlement. The OCPP property contains one SWRPC designated natural area located within the southern PEC south of the rifle range property. This natural area is referred to as the Ravine Woods Natural Area.

Isolated Natural Resource Areas. Isolated natural resource areas are small pockets of valuable wetlands, woodlands, surface water, or wildlife habitat that are separated from environmental corridors by urban development or agricultural use. There are six INRAs on the OCPP property.

Critical Species Habitat. Critical species habitat sites consist of areas, located outside natural areas, which are important for their ability to support endangered, threatened, or rare plant or animal species. Critical species habitat is considered to be important to the survival of a species or a group of species of special concern. There are nine CSHs on the OCPP property all of which are found within the PECs and INRAs. The critical species habitat identified on the site is not synonomous with critical habitat identified by the U.S. Fish and Wildlife Service under the Federal Endangered Species Act.

These larger blocks of habitat at the site provide stopover habitat for migratory birds during their journey to and from their southern wintering grounds. The OCPP stopover areas generally include the corridor along Lake Michigan consisting of a mosaic of woodland, wetland, old-field, grassland, and beach areas.

4.23.2 No Action Alternative

The No Action alternative would not result in changes to wildlife utilization of the project site. While compliance with the consent decree and Clean Water Act 316(b) rule could

result in some modifications to the plant, any impacts from these would be concentrated around the OCPP in existing industrial areas and would not be expected to directly affect any wildlife habitat or wildlife utilization of these habitats.

4.23.3 North Site CUP and North Site Alternatives, Open Cycle Cooling

The North Site CUP and North Site alternatives would have essentially the same impact on wildlife at the OCPP property. Each project would impact approximately 56.84 acres of designated corridors. The impacts would be concentrated on the north half of the property adjacent to the Lake Michigan shoreline. Construction of the ERGS power block would eliminate 50.86 acres of the southern portion of PEC-1 (approximately 40% of the total area). The expansion of the rail loop would result in the loss of 4.28 acres of INRA-4 representing 60% of its total area. Neither of these losses would result in the bisection of the designated corridor and isolation of the remaining components.

Construction of access roads at various locations around the site would impact relatively small portions of INRA-1 (0.17 acre), INRA-2 (1.41 acres), and INRA-5 (0.12 acre). PEC-2 and INRA-3 would not be affected by this alternative. These impacts would exacerbate the habitat linkage problems between areas north and south of the OCPP by eliminating the southern portion of PEC-1. (Impact quantities taken from handouts Applicant provided at 4 March 2005 coordination meeting).

The habitat in these corridors consists of bluff/beach, grassland, old-field, wetland, riparian, and wooded areas. Impacts to these habitat types would affect a number of species that occupy these areas exclusively or use them intermittently for nesting, cover, or feeding. Generalist wildlife species that utilize these areas would most likely relocate to other areas of similar habitat on or off the site. More specialized species that occupy less locally common habitat types, such as woodland and old-field would be more affected by construction of the north site alternative. These species would need to find suitable habitat offsite in order to survive. The remaining areas of PEC-1 north of the proposed ERGS power block would likely decrease in habitat value as a result of increased noise and other disturbances. This could lead to a shift in the wildlife species occupying this area as more disturbance tolerant species gain a competitive advantage.

4.23.4 Caledonia Alternative, Open Cycle Cooling

Construction of the Caledonia alternative would direct land-disturbing activities to areas south of the OCPP. This alternative would result in losses to beach, bluff, grasslands, wetlands, and woodlands. Unlike the North Site alternatives, the excavation for the generating units would occur on already disturbed land. This alternative would impact approximately 23.98 acres of designated corridors on the property (this number represents the acres of impact from the project as reported in the July 2003 permit application minus the acres of impact for the third generating unit). Acreages for impacts to PEC-2 were removed per the statement in the EIS on page 279.

The dock expansion north of the OCPP would impact 11.6 acres of PEC-1 in its southern-most tip (9% of its total area). This impact would include losses of wetland, bluff, and woodland habitat. Infrastructure improvements (roads, rail loop, etc.) associated with the Caledonia alternative would impact INRA-1 (0.23 acre), INRA-2 (1.73 acre), INRA-4 (6.45 acre), and INRA-5 (3.97 acre). The most significant of these impacts would be those to INRA-4 that contains a combination of woodlands and wetland areas at the terminus of the rail loop.

As discussed for the north site alternatives, impacts to these habitat types would result in changes to wildlife species composition and distribution at the OCPP property and in the region. As high quality habitats are reduced in size, fragmented, and exposed to additional edge effects, the suitability of these habitats for specialist wildlife species would be further reduced. Resident species would be forced to find suitable habitat offsite in order to survive or, if possible, move offsite into other suitable habitat. The increased amount of disturbance at the OCPP site both during and after construction could lead to a shift in the wildlife species occupying this area to more disturbance tolerant species.

4.23.5 North Site CUP and North Site Alternatives, Closed C ycle Cooling

As indicated in the wetlands section of this EA, use of closed cycle cooling would increase the footprint of the plant by 4 to 7.3 acres depending on the type of technology used. Under either north site alternative, the area located immediately north of the bowl excavation for the ERGS powerblock would be used to site the cooling towers. This would result in additional impacts to PEC-1 since the entire area from the proposed powerblock north to the property line with Bender Park is part of this designated corridor.

The impacts would include the loss of 1.8 acres of wetlands and an undetermined amount of old field, woodland, and bluff habitat. This loss would increase the total impacts to PEC-1 from 50.86 to between 54.86 and 58.36 acres. Impacts to wildlife as a result of edge effects, noise disturbance, and an overall reduction in quality habitat would also increase with these additional impacts.

4.23.6 Caledonia Alternative, C losed Cycle Cooling

Closed cycle cooling at the Caledonia site would result in additional impacts to wildlife as the footprint of the plant is extended to the south. The additional land requirements for closed cycle cooling would most likely be met by utilizing the area south of the proposed bowl excavation. Expansion to the west is currently constrained by other site infrastructure (rail and access roads). Using the area to the south would impact the northern portion of PEC-2 that is a corridor following the bluff of Lake Michigan. Although not quantified, the impact would most likely be between 2 and 8 acres (T. Smith observation from submitted plans) depending on the configuration of the equipment. This estimate includes impacts to wetlands R-34 (0.48 acre) and R-57 (0.27 acre).

These wetlands are classified as shallow marsh and wet meadow type wetlands. Wetland R-34 was determined to be of low-high functional value using the WDNR RAM. Other than the impacts to PEC-2, the expansion to the south would not have any other impacts on wildlife since, from the western edge of PEC-2 to a point matching the western edge of the bowl excavation, the area is bordered by the rifle range and is not considered high quality habitat for wildlife.

4.23.7 Threaten ed and Endangered Species

Federal
The U.S. Fish and Wildlife Service (FWS) stated in their comment letter dated October 27, 2003 that there were no federally listed threatened or endangered species that occur in Milwaukee County. In April 2005, the Corps requested that the FWS conduct an additional review of their records to identify any new information that may have become available since the initial comment letter was provided. The Corps received a response from the FWS dated May 10, 2005 indicating that the information they provided in October 2003 is still accurate.

State
The FEIS identified the following state endangered and threatened species at the OCPP site.

Blue-stemmed goldenrod (endangered). Blue-stemmed goldenrod is found in second-growth mesic hardwood stands. Three populations of between 150 and 600 plants are currently found on the property.

Peregrine falcon (endangered). A pair of peregrine falcons has nested in an artificial nest box at the OCPP since 1996. The nesting box is located on the stack for OCPP Units 7 and 8.

Yellow gentian (threatened). Yellow gentian is found on the OCPP in the woodland prairie area just south of Elm Road.

Henslow's sparrow (threatened). Henslow's sparrow occupies in a variety of grassland habitats with tall, dense grass and herbaceous vegetation. A Henslow's sparrow was observed on the inactive South Oak Creek landfill grassland in June 2001. The Henslow's sparrow is a candidate for federal listing.

4.23.7.1 Potential Impacts from Project Alternatives

None of the project alternatives would affect a federally listed threatened or endangered species. Potential impacts on state-listed species are discussed in the following paragraphs.

Blue-stemmed goldenrod (endangered). The FEIS did not identify any impacts to the populations of Blue-stemmed goldenrod on the OCPP property for any of the project alternatives.

Peregrine falcon (endangered). Activities associated with construction of any of the project alternatives is not expected to have an effect on the peregrine falcons. In response to additional air monitoring requirements for the Oak Creek Power Plant starting in 2005 not associated with the proposed project, the Applicant has decided to relocate the nesting box to the retired North Oak Creek plant, which is a few hundred meters north of the present location and at a lower elevation. This move should reduce the number of interactions between power plant workers and the birds, allowing both to function more efficiently and safely.

Yellow gentian (threatened). The FEIS did not identify any impacts to the population of Yellow gentian on the OCPP property for any of the project alternatives.

Henslow's sparrow (threatened). The South Oak Creek landfill would be used as a soil stockpile and construction laydown area. As a result, the grassland now maintained on the landfill would be destroyed. The loss of grassland habitat would be temporary since the Applicant has committed to restoring the areas following construction. Since only one sighting has been documented at the site, the impacts to Henslow's Sparrow would be minimal. Over the long-term, there could be a beneficial effect as more grassland habitats are created and restored at the site.

4.23.7.2 Indirect and Cumulative Impacts

The OCPP provides several large blocks of various habitat types. All of the project alternatives would impact some of these habitats and result in the elimination of some of these areas or impact them indirectly through increased edge effects, fragmentation, or isolation. While focused on the habitat, these impacts would have a corresponding effect on the wildlife that utilizes them.

Edge Effects. Edge effects are the adverse consequences of exposing the boundaries of a defined habitat area to predators or human disturbance. Edge effects are typically more pronounced when the ratio of habitat area to edge boundary decreases. A low ratio indicates that more of the habitat is exposed to these effects. As edge effects increase, the habitat available for sensitive species, such as forest interior birds and amphibians, decreases. The result is seen through increased predation and decreased reproductive success. Edge effects could favor more generalist wildlife species such as raccoon, deer, opossum, gray squirrel, robin, starling, and sparrow, among others.

Fragmentation Effects. Fragmentation results from bisecting large blocks of habitat by constructing roads, utility corridors, or other structures. Fragmentation reduces the connectivity between habitats and creates barriers to wildlife movement. Fragmentation could also render patches of a particular habitat area unusable if the remaining size is too small to meet the lifecycle requirements of resident species.

Isolation Effects. Isolation results when a defined habitat unit is separated from other similar habitat types or other habitat types that would allow access, through movement, to other similar habitats. Isolated areas are completely cut off and have no connectivity to other habitats. Depending on the size of the particular unit, edge effects may seriously limit the potential for providing high quality habitat. Larger isolated areas, such as the ones identified by SWRPC, can provide high quality habitat while smaller units are generally regarded as poor quality habitat.

The most serious indirect effect resulting from the proposed alternatives would be the increased barriers to wildlife movement in a north south direction through the OCPP site. The Applicant has avoided, to the greatest extent practicable, to avoid impacts associated with isolation of the remaining onsite resources. Edge effects would result from impacts to PEC-1 and PEC-2 but these effects are largely unavoidable given the size requirements for the additional generating units. In addition, the remaining areas of PEC-1 and PEC-2 are assumed to be large enough to continue to provide high quality interior habitat not subject to edge effects.

Currently, the connectivity between PEC-1 and PEC-2 is largely broken but amphibians, reptiles and mammals could move between these two areas by following the rail corridor and using the wetlands along this route for cover and resting. The infrastructure improvements proposed under each alternative would reduce the potential use of this corridor by adding culverts, eliminating wetlands, and encroaching upon this already narrow corridor with the expansion of the rail loop and construction of the screening berms.

Cumulatively, the loss of additional habitat is of concern in this rapidly developing area of southeastern Wisconsin. The SWRPC tracks changes in the total acreage of Primary Corridors (PEC) and Isolated Natural Resource Areas (INRA) in the region. The SEWRPC data shows that in 1990 Milwaukee County contained 14.5 square miles PEC and 3.3 square miles of INRAs. Racine County had 35.5 square miles of PEC and 12 square miles of INRAs in 2000. Trend data was not available for each County, however, for the region SEWRPC has documented a net gain of 0.7 square miles, or 0.2 percent, of PEC from 1990 to 2000 and a net gain in INRAs of 0.4 acres or 0.6 percent during the same time period.

The impacts to PECs and INRAs associated with the project alternatives would range from approximately 23.98 acres to 63.36 acres. Reasonably foreseeable future actions, such as construction of a third generating unit would increase these numbers slightly but would not result in a significant increase. In the context of the SEWRPC trends analysis this loss of habitat and the resulting impacts to wildlife would not be considered significant. In addition, the mitigation proposed to offset adverse effects, in particular, the wetland mitigation, could result in gains to these categories should the SEWRPC choose to evaluate the proposed mitigation sites and include them in their inventory.

4.23.7.3 Mitigation

Specific mitigation measures for wildlife were not developed. However, implementation of other mitigation measures outlined in this EA would also help to minimize adverse effects to wildlife during construction. In addition, the wetland mitigation described in the Wetlands Section of this EA could replace some of the areas impacted by the project with higher quality habitat.

Wildlife Impact Summary

The OCPP property contains no state or Federally listed species that would be directly affected by any of the reasonable alternatives. Adverse effects to wildlife would be the result of direct loss of habitat. Wildlife species affected include resident reptiles, amphibians, birds, and mammals and migratory species such as birds that may use areas of the site as a stopover location during annual migrations.

The largest and potentially most valuable areas of habitat on the site are located along the bluff of Lake Michigan and are comprised of wetlands, oldfield, woodlands, bluff, and shoreline. Each alternative considered would impact a portion of this habitat for the powerblock bowl excavation. Using the SEWRPC designations as an indicator of wildlife impacts, the North Site alternatives would result in the highest amount of impacts (between 56 and 63 acres). Comparatively, the Caledonia alternative would impact approximately half as much designated areas (between 24 and 31 acres). None of the impacts would be considered significant.

The impacts to PECs and INRAs associated with the project alternatives would range from approximately 23.98 acres to 63.36 acres. In the context of the SEWRPC trends analysis, this loss of habitat and the resulting impacts to wildlife would not be considered significant. In addition, the mitigation proposed to offset adverse effects, in particular, the wetland mitigation, could result in gains to these categories should the SEWRPC choose to evaluate the proposed mitigation sites and include them in their inventory.

5.0 COMPLIANCE WITH OTHER LAWS AND REGULATIONS

Section 307(c) of the Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1456(c))

Section 307(c) of the Act requires a non-federal Applicant for a federal license or permit to conduct an activity affecting land or water resources in the state's coastal zone to furnish a certification that the proposed activity will comply with the state's coastal zone management program. In Wisconsin, the federally approved Coastal Management Program is implemented by the State Department of Administration, Division of Intergovernmental Relations. The proposed ERGS satisfies the State's criteria for determining if a consistency review is required.

The Applicant submitted a certification statement to the Corps on March 4, 2005. The Corps forwarded the certification along with a copy of the Corps's March 4, 2004 Public Notice to the Wisconsin Department of Administration (WDOA) on March 7, 2005. The WDOA responded via letter dated April 1, 2005 that it had waived its right to review the project for federal consistency.

Endangered Species Act of 1973
The U.S. Fish and Wildlife Service (USFWS) stated in their comment letter dated October 27, 2003 that there were no federally listed threatened or endangered species that occur in Milwaukee County. On April 12, 2005 the Corps requested that the USFWS conduct an additional review of their records to identify any new information that may have become available since the initial comment letter was provided. The USFWS responded in a May 10, 2005 letter that there has been no change in the information.

Clean Water Act Section 401 Water Quality Certification
On November 22, 2004 the WDNR, through its contested case hearing procedures, granted Section 401 water quality certification for the proposed project pursuant to Wis. Stat. §281.36 and Wis. Admin. Code NR 103 and 299.

Clean Water Act Section 402 National Pollutant Discharge Elimination System Permit
The WDNR issued a permit to discharge into Lake Michigan from the ERGS/OCPP facility under the Wisconsin Pollutant Discharge Elimination System (WPDES) on March 30, 2005. The WPDES permit authorizes the following: discharges from the plant into Lake Michigan, construction of the off-shore cooling water intake structure, and the emergency cooling water intake structure in the discharge channel.

Section 106 of the National Historic Preservation Act
The implementation of Section 106 by the Corps' Regulatory Program follows the provisions found in two sets of regulations. The Advisory Council on Historic Preservation's regulations found at 36 CFR Part 800 and the U.S. Army Corps of Engineer's regulations found at 33 CFR Part 325 Appendix "C". During the Section 106 review, historic properties are identified and the effects of the undertaking on those properties are assessed and, if effects are considered to be adverse, they are avoided, minimized, or mitigated. The undertaking is the authorization of any work, or structure, in waters of the U.S. It is not the proposed project. The Corps submitted a No Affect Determination to the State Historical Society of Wisconsin by letter dated December 7, 2004. The State Historical Society of Wisconsin concurred with the Corps's determination by letter dated January 4, 2005.

Clean Air Act
The WDNR issued a construction permit authorizing the Applicant to build the ERGS on January 14, 2004. The Applicant is also required to obtain an operation permit under § 285.60(1)(b) Wis. Stats. The operation permit may be issued after the Applicant demonstrates that the sources included in the construction permit are in compliance with applicable rules, emission limits and the conditions.

Conditional Use Permit – City of Oak Creek
The Applicant and the City of Oak Creek negotiated a CUP in May 2003. The CUP was negotiated to satisfy community concerns regarding potential fugitive dist emissions from the coal storage handling areas and aesthetic concerns surrounding the two proposed chimneys (FEIS p. 391). With the CUP, the City of Oak Creek approved the construction of the North Site CUP alternative.

Conditional Use Permit – Racine County and the Town of Caledonia
On August 16, 2004 the Racine County Economic Development and Land Use Planning Committee approved a conditional use permit for construction and operation of the portion of the Elm Road Generating Station in Racine County. The permit also contained conditions required by the Town of Caledonia who approved the plan on August 11, 2004.

6.0 DRAFT DECISION REGARDING THE NEED FOR AN EIS

In accordance with the National Environmental Policy Act of 1969, as amended, and the Council on Environmental Quality's Regulations for implementing the procedural provisions of the NEPA (40 CFR Part 1500-1508), the Corps has prepared an EA as part of a Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permit evaluation for a proposed expansion of the existing OCPP, located in the City of Oak Creek, Milwaukee County, Wisconsin. The EA describes the environmental consequences of the proposed project and its reasonable alternatives, and is briefly summarized as follows.

Proposed Action
Subsidiaries of WEPC (the Applicant) submitted an initial application in June 2002 to the Corps, seeking authorization under Section 404 of the Clean Water and Section 10 of the River and Harbors Act to place fill in wetlands and Lake Michigan for the construction of two advanced technology coal-fueled electrical generating units and compulsory facilities at the proposed ERGS. The ERGS would be located on the Applicant's property adjacent to the existing OCPP. Facilities associated with the proposed project include an open cycle cooling water intake, dock extension, wastewater and cooling water discharge channel, access roads, rail improvements, and storage areas.

The Applicant's initial proposal identified two sites under consideration at the OCPP: the Oak Creek Site, located north of the existing power plant, and the Caledonia site, located immediately south of the existing power plant in Racine County. The Oak Creek site was identified as the primary site and the Caledonia site as the alternate. The Applicant subsequently identified a modified version of the Oak Creek site as their preferred alternative. This alternative was negotiated with the City of Oak Creek, and incorporates the terms of the CUP that the city issued to the Applicant, and is called the North Site CUP alternative.

Alternatives to the Proposed Action
The Corps determined that the North Site CUP alternative, North Site alternative, and Caledonia Site alternative, as well as an alternative to construct the proposed project with a closed cycle cooling system, were reasonable alternatives to achieving the project purpose, carried them through the EA. In addition, although the no action (no build) alternative would not achieve the project purpose, it was carried through the EA for comparison purposes.

Summary of Findings

Air Quality. Air emissions from the proposed project would be regulated by the WDNR through the Air Pollution Control Construction Permit, issued by the WDNR on January 14, 2004. In issuing the permit, the WDNR determined that the proposed project would meet the NAAQS, which are designed to protect public health and welfare. In addition, the Oak Creek CUP issued to the Applicant for the proposed project requires no net increase in air emissions over calendar year 2000.

The Applicant expects system-wide emissions of sulfur dioxide and nitrogen oxide to be reduced by more than 65 percent, mercury by more than 60 percent, and particulate matter by more than 30 percent with implementation of a multi-year initiative (PTF Plan) to expand generation and reduce emissions from Wisconsin Electric's system. The Applicant anticipates a net air quality benefit for Southeastern Wisconsin as a result of implementing the PTF plan. The Applicant estimates that emissions at the Oak Creek Site, including both the existing OCPP units and the new ERGS units, would be reduced by about 60 percent.

Based upon the WDNR air permit analysis, the actions that would be taken by the Applicant to maintain air emissions at or below year 2000 levels, and the Applicant's PTF plan, significant impacts to air quality associated with the proposed project are not anticipated.

Aquatic Resources. Aquatic resource impacts of the proposed project have been avoided to the extent practicable. Potentially adverse impacts would be minimized through implementation of storm water management and erosion and sediment control measures. The adverse benthic impacts of the proposed project would be reduced through mitigation aimed at improving habitat for target fish species.

The proposed project also includes the establishment and maintenance of a fillet and feeder beach that would ensure the continued down coast transport of sand past the OCPP facility. The Applicant would obtain a consumptive water use permit from the WDNR for the increase in consumptive water use from Lake Michigan for the proposed project. The proposed consumptive water use is not expected to have any significant impacts, given the size of Lake Michigan relative to the water use that would occur. Finally, the proposed project would comply with Clean Water Act §316(b) requirements and would substantially reduce impingement and entrainment impacts as compared to existing conditions.

Construction Impacts. Construction noise, fugitive dust, and erosion and sedimentation would be limited and monitored by the conditions of the CUPs that have been issued to the Applicant by Racine/Caledonia and the City of Oak Creek. The CUP conditions would also minimize impacts of construction traffic shift changes, and the predicted traffic level increases of 5 to 15% over baseline levels are not expected to have a significant affect on local traffic.

Floodplain and Groundwater Impacts. The direct, indirect, and cumulative effects to groundwater and floodplains would be negligible for any of the reasonable alternatives. The proposed project would have a potentially positive effect of reducing potential for groundwater contamination from an existing landfill in the project area.

Historical/Archaeological Resources. The proposed project would not affect historic or archaeological resources on or in the vicinity of the OCPP.

Land Use. The construction of additional generating units at the site would not conflict with existing land uses and would not be considered an adverse effect.

Navigation. The proposed project and the alternatives considered would have no effect on navigation.

Noise. The predicted noise levels associated with the proposed project are not a significant increase over existing conditions.

Recreation. There would be no direct impacts to any recreation areas in the project area. Indirect effects would be limited to minor visual impacts and minor increases in sound levels. Recreation opportunities would likely increase with proposed project.

Solid/Hazardous Waste. Solid and hazardous waste streams would be similar to those currently generated at the existing OCPP. There is adequate landfill capacity in the project area for waste associated with the proposed project. Changes in the type and quantity of waste that would result from the proposed project and its alternatives are not expected to be significant.

Water Quality. No adverse effects to water quality are anticipated with the discharge of dredged and fill material into waters of the United States for the proposed project. In its Clean Water Act Section 401 certification, the WDNR has determined that the proposed fill activity would not adversely affect water quality.

Potable Water Use. No adverse effects of the proposed project on the potable water supply are anticipated, due to the capacity of the Oak Creek Water and Sewer Utility, and precautions that would be taken to protect potable water supplies.

Wastewater Discharges. Discharges to Lake Michigan from the proposed project have been evaluated by the WDNR and determined to meet all applicable criteria. By

obtaining a WPDES permit, the Applicant has shown that discharges associated with the proposed project would not result in appreciable harm to the aquatic community. Accordingly, wastewater discharges from the proposed project would not have a significant impact.

Traffic/Transportation Networks. Traffic increases that would result from the proposed project and its alternatives are not expected to exceed capacity of area roadways nor result in unacceptable levels of service.

Vegetation. The Applicant has revised the project design as much as possible to avoid areas of high quality native vegetation and minimize unavoidable impacts. While not directly intended to offset impacts to upland vegetation, the seventy acres of upland buffers and wetland restoration and enhancement proposed for the project would offset the loss of some of these designated environmental areas. The loss of designated high quality environmental corridors and natural areas at the OCPP would be an adverse effect for any of the project alternatives but is not considered significant.

Visual Impacts. Because this is an expansion of an existing plant, facilities would be placed at the base of the bluff, and visual screening in the form of berms and vegetation have been incorporated into the proposal, no significant aesthetic impacts are anticipated as a result of the proposed project.

Wetlands. The Applicant's proposal to compensate for the 23.46 acres of wetland impacts associated with the proposed project includes 36 acres of wetland restoration and enhancement, and 39 acres of upland buffer enhancement/establishment. This proposal would be consistent with the *Guidelines for Wetland Compensatory Mitigation in Wisconsin* and would offset the unavoidable impacts to wetlands at the site.

Wildlife. The OCPP property contains no state or federally listed species that would be directly affected by any of the reasonable alternatives. Adverse effects to wildlife would be the result of the direct loss of habitat. Impacts to designated primary environmental corridors (PECs) and Isolated Natural Resource Areas (INRAs) associated with the proposed project would total approximately 55 acres. In the context of trends analysis conducted by the SEWRPC, which shows a net gain of PECs and INRAs in the region, this loss of habitat and the resulting impacts to wildlife would not be significant. In addition, the mitigation proposed to offset adverse effects, in particular, the wetland mitigation, could result in gains to these categories should the SEWRPC choose to evaluate the proposed mitigation sites and include them in their inventory.

Mitigation Measures

The following mitigation measures are either integral to the proposed project, or would be imposed by local, state or federal authorizations required for the proposed project.

Air Quality

(1) Combined emissions of SO_2, NO_x, PM, mercury, VOCs, hydrochloric acid, hydrofluoric acid, and sulfuric acid from the proposed project and existing OCPP

will not exceed the baseline emission levels of the existing OCPP in calendar year 2000. Compliance with this emission limitation will be demonstrated on a 12-month rolling average.

(2) Perform regular emission monitoring to ensure air emissions do not exceed the 2000 level cap.

(3) Reduce VOC emissions by 355 tons from existing sources in the area, to offset VOC emissions associated with the proposed project.

Aquatic Resources

On-Shore

(1) Delineate and maintain an undisturbed buffer around all stream channels on the OCPP property within areas disturbed by construction of the ERGS. The buffer shall be demarcated prior to any land disturbing activities and shall extend 25 feet on each side of the channel as measured from the centerline.

(2) Work in streams will occur during periods of low flow and any ongoing activities will be properly stabilized prior to any precipitation events.

(3) Restore all waters of the United States temporarily impacted by construction activities to their pre-impact conditions within 15 days of completion of construction.

(4) All road and railroad crossings will be installed in a manner that does not impede the passage of fish and wildlife.

(5) Construction of road and railroad crossings will not occur between April 1st and June 1st, to avoid seasonally high water levels and to avoid disruption to spawning fish species.

(6) Storm water runoff will be treated for the removal of pollutants prior to discharge to any waterway or wetland.

(7) Prior to any land disturbance associated with the proposed project, the wetland areas that are to remain undisturbed shall be clearly marked in the field so that boundaries are visible to equipment operators.

Offshore

(1) With a few exceptions, construction on the lakebed will not occur between March 1st and July 1st, to avoid disruption of stocking and spawning of fish species.

(2) Construct the cooling water intake structure by tunneling instead of trenching and employ wedge-wire screens to avoid impingement.

(3) Locate the cooling water intake 7,900 feet offshore, with centerline 35 feet below low water datum, at a water depth of 43 feet, with an intake rate of no more than 0.5 feet per second, to minimize entrainment.

(4) Limit dredging in the navigation channel to the minimum necessary to restore the approximate dimensions of the channel.

(5) Operation of the emergency backup intake structure will be limited to not more than 3.3% of the time during any 12-month period.

(6) Construct six artificial reef structures on the bed of Lake Michigan. The reefs shall be located at least one mile south of the proposed water intake structure on firm substrate of cobble or clay in 40 to 60 feet of water.

(7) Develop and submit a plan to implement the initial and long-term measures described in the submittal titled *Mitigation of Interruption to Sand Bypassing Conceptual Plan, Elm Road Generation Station, Oak Creek, Wisconsin, March 23, 2005.*

Construction Impacts

(1) Obtain an Environmental Compliance Monitor, an independent firm or individual that will work under the direction of the WDNR and will monitor environmental compliance during every phase of construction of the proposed construction.
(2) Prepare an erosion control and turbidity control plan for WDNR approval.
(3) Erosion control measures must be in place and operational at the end of each working day during construction of the proposed project.
(4) Construction roads shall be paved or managed for dust control.
(5) Construction site runoff shall be treated for the removal of pollutants prior to discharge to any waterway or wetland.
(6) Limit construction activities in areas near residences to normal working hours until screening berms are in place, as dictated by the Oak Creek and Racine County CUPs.
(7) Monitor noise levels during construction at designated monitoring points, as dictated by the Oak Creek CUP.
(8) Meet noise limits of 63 to 75 dBA at the designated monitoring points.

Noise

(1) Monitor noise levels during operations at designated monitoring points, as dictated by the Oak Creek CUP.
(2) Meet noise limits of 50 dBA at the designated monitoring points, as dictated by the Oak Creek CUP.

Recreation

(1) Provide a recreational trail connection from Six Mile Road to the existing recreational trail.

Socioeconomics

(2) Shared revenue payments totaling an estimated $5.6 million to $8 million, collectively, to local governments.
(3) Investment of $10 million in the redevelopment of parcels of land in the City of Oak Creek, over 10 years.
(4) Interim mitigation payments annually to the City of Oak Creek of $1.5 million for the first SCPC Unit and $750,000 for the second unit.
(5) Prepare and submit to Racine County and the City of Oak Creek a Fire Protection and Emergency Management Protocol/Plan for the OCPP property that addresses both the construction period and the operations period of the proposed project.

Transportation Networks

(1) Eliminate 3 at-grade railroad crossings in the project area.

Visual Impacts

(1) Place berms and vegetative screening at strategic locations, as dictated by the Oak Creek and Racine County CUPs.
(2) Exterior lighting will conform to safety and aesthetic criteria addressed in the Racine County CUP.

Wastewater Discharges

(1) Use best available technology in treating wastewater discharges
(2) Conduct routine monitoring to ensure compliance with all wastewater discharge limits. Specifically, conduct quarterly monitoring to ensure that discharges to Lake Michigan do not exceed the wildlife criterion for mercury of 1.3 ng/L.

Wetlands

(1) Restore 6.03 acres of shallow marsh and sedge meadow wetland, enhance 6.28 acres of shallow marsh and sedge meadow wetland, and restore 13.56 acres of upland buffers at the STH 32 East Mitigation Site;
(2) Restore 3.59 acres of shallow marsh and sedge meadow wetlands, enhance 4.94 acres of shallow marsh, sedge meadow, and hardwood swamp; and restore 6.16 acres of upland buffers at the Elm Road/W-1 Mitigation Site;
(3) Restore 3.59 acres of shallow marsh, deep marsh, sedge meadow, and shrub carr wetlands; enhance 6.75 acres of shallow marsh, deep marsh, sedge meadow, and shrub carr wetlands; and restore 19.28 acres of upland buffers at the STH 32 Northwest Mitigation Site;
(4) Wetland restoration and enhancement and establishment of upland buffers at a 17.5 acre site referred to as the Seep Wetland Mitigation site;
(5) Make a contribution in the amount of $50,000 to a non-profit preservation fund in Southeastern Wisconsin for the purchase and long-term protection of Lake Michigan coastal wetlands under a demonstrable threat from development, logging, agriculture, or other intensive land use that would result in degradation, reduction or elimination of the natural functions of that wetland resource.
(6) Control invasive plant species at the wetland mitigation sites. Specifically, purple loosestrife shall be completely excluded, reed canary grass shall be limited to no more than 10 percent of a site, and giant reed grass shall be limited to no more than 5 percent of a site.
(7) Native species will cover 75 percent of the total wetland areas within the mitigation sites, including at least 20 different native species
(8) Protect all wetland mitigation sites by recording land use restrictions with the titles to the property in accordance with Wisconsin law.
(9) Submit annual mitigation monitoring reports on the status of each wetland mitigation site for a period of five years following construction of the proposed project.

Indirect and Cumulative Impacts. The extent of indirect and cumulative impacts associated with the proposed project has been evaluated in the relevant resource areas of the EA. In some resource areas, such as air quality, the permitting process that has been applied to the proposed project has taken into account indirect and cumulative effects.

Because the proposed project is an expansion at an existing power plant site, it includes substantial improvements when compared to the existing conditions of the OCPP and given the extent of mitigation measures that have been incorporated into the proposal, indirect and cumulative impacts are not expected to rise to the level of significance.

Decision

During the public comment periods for the proposed project, several requests were made for the preparation of an EIS. These comments have been carefully considered and addressed in the EA. In addition, all comments received from the public and resource agencies during the public review process have been carefully considered and addressed in the EA. Council on Environmental Quality guidance on implementing NEPA (CEQ 40 Questions, http://ceq.eh.doe.gov/nepa/regs/ 40/40p3.htm) indicates that mitigation measures that are part of a proposal or are required by statute or regulation may be relied upon in determining the need for an EIS. Moreover, Corps guidance (Army Corps of Engineers Standard Operating Procedures for the Regulatory Program, http://155.79.114.198/ rix/sop/hqsop1.pdf) requires that an EIS only be prepared when legally required, and to make this determination after considering all mitigation associated with the proposed project.

Based on the potential impacts and mitigation measures associated with the proposed project, and provided in more detail in the EA, Corps authorization of the proposed project under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act would not result in a significant impact on the quality of the human environment, and therefore does not require the preparation of an EIS.

Appendix A

Substantive Public Hearing Comments

Table 1. ERGS Public Hearing Comments

Commenter & Page	Representing	Summary of Substantive Comment(s)	Response
Diane Lange 8	Self	American Lung Association gave Racine County an F for ozone level in 2003, concern for fish habitat, fishing, and recreation	See Response 1, comments noted
Chuck Johnson 11	Self	Request complete review	See Response 2.
Peter Beitzel 12	Metropolitan Milwaukee Association of Commerce	support the project and the use of coal at the Oak Creek site	Comments noted.
Gregory Francis Bird 14	Self	thermal changes need careful study, concern for additional mercury emitted into atmosphere, proposed site is in an area that has not been disturbed, and there is a site to the south that already is disturbed	See Responses 2, 3, 4
Monfred Stelter 15	Self	Concern with air quality impacts	See Response 1
Eric Uram 16	Sierra Club Midwest office	Request preparation of an Environmental Impact Statement, concern with cooling water impacts and alternative cooling systems, loss of the ecosystem values of the associated wetlands and the near-shore areas, human health impacts of plant emissions & ultimate fate of flue gas poisonous materials.	See Responses 1, 2, 3, 5
Shawn Marx 19	Self	Project is needed and will be an economic benefit	Comments noted, see also Response 7
Wayne Merkovich 20	Operating Engineers Local 317 Union	Open cycle cooling preferred over closed cycle due to no water consumption, no plume, and lower operating expenses	Comments noted, see also Response 3
Laurel O'Sullivan 23	Staff Counsel Lake Michigan Federation	Concern for Lake Michigan impacts, first open-cycle plant to be built on the Great Lakes in nearly 20 years, disturbance of 11.5 acres of lake bed, request preparation of EIS, concern for mercury emissions, facility may discharge between 30 and 97 pounds of mercury into Lake Michigan in excess of Great Lakes Initiative water quality standards, wedge wire screens with 9.5 mm openings, exceeding EPA standard of 1 mm openings, impact of open cycle cooling and thermal plume on aquatic life	See Responses 1, 2, 3,5, 6
Scott Johnson 29	S.C. Johnson & self	Request thorough alternatives analysis, request preparation of an EIS, an analysis of health impacts of mercury emissions, ecological impacts of once-through cooling, ecological impacts of mercury discharges to Lake Michigan, economic costs, and less damaging alternative locations.	See responses 2, 3, 4, 6
Gerald Buck 32	Self	In favor of project due to availability of coal, efficiency, cooling towers have	Comments noted, see also

		negative aesthetic impact, consume water, and potentially affect Mitchell Field	response 3
John Kelley Magee 35	Self	Coal will be less expensive than natural gas for ratepayers, suggest improvements to rail operations	Comments noted, railroad operations are addressed in the Corps permit evaluation on page x. See also Response 7
Verena Owen 38	Self	Request Corps notify neighboring states, specifically Illinois, if project will impact that State's clear water standards. In Illinois, open-cycle cooling is illegal, request preparation of EIS.	The Corps sent a letter to Illinois, etc on DATE 2004. See also response 2
Suzanne Denoto 40	Self	Too many questions that need to be answered before going forth with this project	Comments noted.
Greg Weiland 41	Self	The new power plants in Oak Creek will be among the most efficient state-of-the-art coal plants in the world.	Comments noted.
Claude VanderVeen 43	Self	Request preparation of an EIS	See response 2
Arlyn Olson 45	Self	Request thorough analysis of impacts, discussed intelligent tinkering	See response 2
Forrest Ceel 47	Local 2150, electrical workers union	Suggest that the Corps review public testimony and concur with the results.	Comments noted.
Tim Lex 49	Self	Concern for impacts to Bender Park	See response 5
Karlyn Morris 50	Self	Concern for human health impacts of air pollution, consider alternatives to increased coal burning at the project site	See responses 1, 4
Lyle Balistreri 51	Milwaukee Building & Construction Trades Council	Representing all the construction unions in the State of Wisconsin and Southeast Wisconsin, approximately 15,000 construction workers, $860 million in wages and benefits for working people	Comments noted, see also Response 7
Derek Scheer 55	Clean Wisconsin	Asked the Corps to reevaluate the impact and alternatives to the proposal. Consideration of the alternatives should be extensive.	See responses 2, 4
Bonnie Prochaska 57	Sustainable Racine	Sustainable Racine advisory board voted overwhelmingly in support of natural gas as a fuel choice for additional power generation at Oak Creek. Natural gas has less impact on human health and the environment.	See response 4
Patricia Morrill 59	Self	WE Energies has let the contracts to start construction without the needed permits. Requested a thorough investigation.	Comments noted. See response 2

Mike Flaherty 61	Americans for Balanced Energy Choices	Project reduces emissions by 50 percent. Support use of coal. Natural gas has similar ozone emissions and is more costly.	Comments noted, see also Responses 1, 7.
Ken Vetrovec 63	Self	Project is needed for adequate energy, jobs, business, recreation opportunities incorporated into project cooling towers have visual impacts and are less efficient.	Comments noted, see also Response 7
Richard Burt 67	Self	State EIS is deficient, request Corps EIS for 8 reasons: 1) air quality: marginal compliance with particulate matter regulatory levels, 2) mercury impacts on human health, the environment and Lake Michigan, 3) No alternative facility locations were evaluated, 4) no mitigation plans wetland/wildlife impacts, 5) Externality costs not included, 6) closed-cycle cooling not evaluated, 7) address costs if 316(b) new facility requirements applied, 8) need to evaluate other less damaging energy sources	See responses 1 through 7
George Meyer 71	Wisconsin Wildlife Federation	Neither opposed nor in favor of project, substantial reduction in air pollution with project, adequate study is needed of aquatic impacts, to include impingement, entrainment, thermal and mercury discharges. Willing to work with state/fed agencies on the analysis.	See Responses 1 through 3, 6
Robert H. Owen, Jr. 76	Self	Request an EIS, object to project on the basis of need and cost-effectiveness. Base load power plants are supposed to meet base loads, not all loads. Cheaper and less damaging alternate sources of energy are available: energy efficiency, wind energy, and gas-fired combined cycle power. Provided a study for the Wisconsin Focus on Energy evaluating off-shore wind energy.	Need to specifically address report submitted. See also responses 2, 4, and 8
Louie Seabolt 80	Self	Natural gas is a better alternative. WE Energies stated that gas was a more economical choice of fuel than coal for the Port Washington plant. Requested a proper investigation.	See responses 2, 4
Robert Cooper 84	Self	The Zion Station power plant located about 35 miles down shore took in a substantially larger quantity of water and returned it to the lake every day, operating for 25 years.	Look into effect and status of Zion plant. See also response 3
Larry Haskin 87	City Attorney City of Oak Creek	Negotiated a conditional use permit (CUP) with the Applicant that requires compliance with air quality standards and limits total plant emissions to 2000 levels. Selected a location with the least impacts to the community. CUP addresses monitoring and enforcement. Other configurations may have had fewer water and wetland impacts, but would result in substantial adverse impacts to our citizens.	Comments noted.
Ann Brodek 92	Trustee	Board passed resolution against proposed project. largest excavation project	See responses 2 through 6

	Village of Wind Point	in Wisconsin history. Concerned with impacts of on-shore backup cooling water system, thermal discharge, mercury emissions, lack of alternatives analysis. Requested preparation of an EIS.	
Andy Weber 96	Self	Request preparation of an EIS. Concerned with mercury, thermal discharge in cooling water. Lack of alternatives analysis. Object to coal as source of fuel due to emissions.	See responses 1 through 4
Peter Rasmussen 100	Self	Prefer once through cooling due to fish attraction, no water consumption, and no plume.	
Donald Lintner 101	Self	Requested a thorough and complete review. Suggested running the existing plants during off-peak hours, storing the power, and meeting peak demands this way as an alternative to the proposed project, Concern for mitigation of wetland impacts. Additional alternatives sites may be available for 2 units instead of 3.	See responses 2, 4
Rebecca Jorgensen 105	Self	Area south of Bender Park does not appear to be brownfield. Requested new alternatives analysis, preparation of an EIS	See responses 2, 4
Robert Devine 107	Self	urgent need for construction of new generation and transmission facilities in Wisconsin. Once-through cooling water design is more efficient and has less visual impact than cooling towers, designed flow rate would be 20 percent greater than authorized flow rate	Comments noted. See also responses 3, 8.
Renee Michna-Motley 110	Self	State EIS is out of date, inadequate. Requested preparation of an EIS	See response 2
Reuben El 112	Self	Proposal will benefit fishing, coexist with existing environment	Comments noted.
Mary Ann Weyker 113	Self	Concerned about the environmental impact on Lake Michigan and on the air. Requested investigation of renewable sources of energy and means to reduce energy consumption. Requested preparation of an EIS	See responses 1-4.
Chris Zapf 115	Great Waters Group Sierra Club Milwaukee and Waukesha	Project area is one of the last undeveloped bluffs in the southern Lake Michigan area, concern for migratory birds, impact of thermal & mercury discharge, Requested preparation of a proper EIS.	See responses 3,5, 6
Irene Michna 117	Self	Concern for further lake impacts and further loss of lakeshore recreation	Comments noted.
John Berge 119	Sierra Club Southeast Gateway Group	Need to investigate cooling alternatives and effect of intake structure, volume of water being pumped out of the lake, warmed by 15 degrees, and then dumped back into the lake shoreline. Fish population studies were done at night when fish typically are at surface. Investigate effects of copper alloy	See responses 3, 9

		on aquatic resources.	
Steve Bulik 121	Citizens for Responsible Power	Outdated, inadequate alternatives analysis, does not agree that site is a brownfield, estimated that the near-shore backup system will be used up to 10 percent of the time, proposed plant in Weston, WI, a 500 megawatt coal-burning power plants and uses a closed cooling system. Concerned with mercury discharge. A thorough and complete EIS needs to be completed.	See responses 2 through 6
Gary Billington 127	Self	In favor of proposal due to economic benefit. Having abundant, affordable supply of energy is important factor in securing future quality of life.	Comments noted. See also response 7.
Robert Nemanich 129	Self	EIS presented by WE Energies was incomplete. Disclose full economic, medical, social and emotional costs regarding methyl mercury.	See response 6.
Frank Egerton 132	Self	Proposal is not in the best interest of people, environment or economy of southeast Wisconsin; carries more liabilities than advantages. Concern for air pollution and mercury discharges. Request a thorough and unbiased Environmental Impact Statement and exploration of less destructive alternatives	See comments 1, 2, 6
Patrick Lawler 134	Self	Proposal is going to use the most modern technology to harness energy from our most abundant resource, and provide a vibrant economy	Comments noted.
Thomas Dwyer, II 139	United Transportation Union.	Request preparation of EIS with realistic expectations.	See response 2.
Jeff Calvert 146	Self	State EIS was incomplete. Question completeness of alternatives analysis. Concern for impacts to nesting peregrine falcons	See responses 2, 4, 5.
William Jahnke 149	Self	Discussed the disadvantages of alternative fuel sources. If the permit application meets those requirements, then they should be allowed the use of Lake Michigan water to cool their power plant alternatives have disadvantages	Comments noted.
Richard Wanta 152	Self	Support proposal to expand the coal-fired power plant and to build a water intake pipe into Lake Michigan, due to economic benefits.	See response 7.
Francie Winkler 157	Self	Take the time to make an environmental study.	See response 2.
Dorothy Bocciardi 158	Self	PSC has failed to correctly calculate the cost of coal versus the cost of natural gas. Request full report from the International Joint Commission on the impact of the Great Lake's basin ecosystem before proposal is approved. There are feasible alternative sources of power.	Address joint commission comment. See response 4.
Eric Skindzelewski 163	Lakeshore Fisherman's	Applicant has been back flushing screens, which is out of compliance with permit. Concern for mercury discharges.	Comments noted. See response 6.

	Club		
Nancy Hennessy 168	Self	Request preparation of an EIS.	See response 2.
Pete Karas 168	Bright Public Power Initiative	Request preparation of an EIS.	See response 2.
Gerard McMullen 173	Self	Concerned about the potential adverse environmental impact on air and water quality and the destruction of shore land and wetland. Concerned about health effects caused by mercury pollution in air and water. Concerned about fish advisories for Wisconsin waters due to mercury pollution from coal-powered plants. Concern for once-through cooling and thermal discharge. Request that Corps conduct its own thorough Environmental Impact Study.	See responses 1, 2, 4, 5.
Debra Hall 176	Self	The particulate matter emitted by the coal plant contributes to asthma and cancer. Southeastern Wisconsin has some of the highest rates of childhood asthma in the nation. How does Applicant plan to replace the fish eggs that will be killed by the intake? Concern for increased mercury levels present in fish. Request a full and comprehensive analysis of the environmental and human health impact.	See responses 1 – 3, 6.

Table 2. Written Comments Received, ERGS Public Hearing

	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
1.							
2.	22 Sep 2004	24 Sep 2004	John	Busby	Miller Compressing Company	Support proposal due to energy need; economic growth, and reliability	Comments noted.
3.	23 Sep 2004	28 Sep 2004	Cynthia	Staaden	Self	Favor granting permit; proposed plan is better than existing plan	Comments noted.
4.	26 Sep 2004	29 Sep 2004	Richard	Doria	Self	Support advanced coal-fired technology. It is clean if properly managed; coal is an almost limitless supply.	Comments noted.
5.	26 Sep 2004	29 Sep 2004	William	Huegel	Self	Urge approval of project; thermal discharges are not an issue due to experience at Point Beach nuclear facility. Project is needed.	Comments noted. See response 3
6.	28 Sep 2004	30 Sep 2004	Lois	Krenzke	Self	Concern for air quality impacts, impingement impacts, lakebed fill impact, and reduced water quality due to wetland loss	See responses 1, 3, 10, 11
7.	Not dated	29 Sep 2004	William D.	Jahnke	Self	Discussed the disadvantages of alternative fuel sources. If the permit application meets those requirements, then they should be allowed the use of Lake Michigan water to cool their power plant alternatives have disadvantages	Comments noted. (Public hearing p. 149)
8.	Not dated	29 Sep 2004	Nancy	Henessy	Self	Request full examination of proposed project (EIS), concern for health effects of coal usage, loss of lakeshore, wetlands, and bluff, alternative cooling technologies	See responses 1 – 3, 5
9.	29 Sep 2004	29 Sep 2004	Jeanne	Karnes Driver	Self	Concern for health effects of coal usage, drinking water from the lake, and fish supply. Request a thorough investigation with highest priority to health effects	See responses 1 - 3, 6, 11,
10.	29 Sep 2004	01 Oct 2004	Richard	Burt	Self	State EIS is deficient, request Corps EIS for 8 reasons: 1) air quality: marginal compliance with particulate matter regulatory levels, 2) mercury impacts on human health, the environment and Lake Michigan, 3) No alternative facility locations were evaluated, 4) no mitigation plans wetland/wildlife impacts, 5) Externality costs not included, 6) closed-cycle cooling not evaluated, 7) address costs if 316(b) new facility requirements applied, 8) need to evaluate other less damaging energy sources	See responses 1 – 7 (Public hearing p. 67)
11.	29 Sep 2004	29 Sep 2004	Steve	Bulik	Self	Outdated, inadequate alternatives analysis, does not agree that site is a brownfield, estimated that the near-shore backup system will be used up to 10 percent of the time, proposed plant in Weston, WI, a 500 megawatt coal-burning power plant, uses a closed cycle cooling system and 1% of ERGS water intake on per MW basis. Concerned with mercury discharge. A thorough and complete EIS needs to be completed. Provided photos of bluff and beach area, excerpts from state EISs.	See responses 2 – 6 (Public hearing p. 121)
12.	29 Sep 2004	29 Sep 2004	Frank N.	Egerton	University of WI-Parkside	Proposal is not in the best interest of people, environment or economy of southeast Wisconsin; carries more liabilities than advantages. Concern for air pollution and mercury discharges. Request a	See comments 1, 2, 6 (Public hearing p. 132)

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	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
1.						thorough and unbiased Environmental Impact Statement and exploration of less destructive alternatives	
13.	26 Sep 204	29 Sep 2004	Francie	McGuire Winkler	Self	Take the time to make an environmental study.	See response 2. (Public hearing p. 157)
14.	29 Sep 2004	29 Sep 2004	David	Weintraub	Self	Submitted numerous documents, need to return to this.	
15.	29 Sep 2004	29 Sep 2004	John	Berge	Conservation Chair of the Southeast Gateway Sierra Club spokesman	Need to investigate cooling alternatives and effect of intake structure, volume of water being pumped out of the lake, warmed by 15 degrees, and then dumped back into the lake shoreline. Fish population studies were done at night when fish typically are at surface. Investigate effects of copper alloy on aquatic resources. Concern for near-shore and thermal impact of using on-shore intake up to 10% of the time. Effects of lowering lake level due to increased evaporation, mercury discharge, bluff loss, wetland loss, loss of primary environmental corridor, Lake MI flyway and effects to migratory birds, effects of noise and dust, air quality impacts,	See responses 3, 9 (Public hearing p. 119)
16.	Not dated	29 Sep 2004	Natalie	Chulew	Self	Opposed to coal as fuel source, concern for health effects related to air emissions, recommend cautious and careful consideration of proposal	See responses 1 & 2
17.	29 Sep 2004	29 Sep 2004	Jim and Patricia	Morrill	Self	WE Energies has let the contracts to start construction without the needed permits. Requested a thorough investigation.	Comments noted. See response 2 (Public hearing p. 59)
18.	29 Sep 2004	29 Sep 2004	Arlyn	Olson	Self	Request thorough analysis of impacts, discussed intelligent tinkering	See response 2 (Public hearing p. 45)
19.	29 Sep 2004	29 Sep 2004	Mary Ann	Kniep	Self	Concern for impacts, request comprehensive EIS	See response 2
20.	29 Sep 2004	29 Sep 2004	Delene F.	Hanson	Self	Concern for impacts, request comprehensive EIS	See response 2
21.	29 Sep 2004	29 Sep 2004	Thomas L.	Ueberroth	Self	Concern for impacts, request comprehensive EIS	See response 2
22.	29 Sep 2004	29 Sep 2004	Lois	Vanderbeke	Sisters of St. Dominic, Racine Dominican Community of 205 Sisters	Coal generated plants are major polluters and old technology. Not all energy needs to be on line immediately.	Comments noted. See response 1
23.	29 Sep 2004	29 Sep 2004	Judene	Walsh	Self	Concern for health effects. Request preparation of EIS.	See responses 1 & 2
24.	29 Sep 2004	29 Sep 2004	Jean	Verber	Self	Concern for fresh water quality due to mercury discharge	Comments noted. See response 6.
25.	29 Sep 2004	29 Sep 2004	Claude	Vander Veen	Self	Request preparation of an EIS	See response 2 (Public hearing p. 43)
26.	29 Sep 2004	29 Sep 2004	Kenneth	Kveton	Self	Support once-through cooling and proposed project	Comments noted.

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1.	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
27.	29 Sep 2004	29 Sep 2004	Laurel	O'Sullivan	Lake Michigan Federation counsel	Concern for Lake Michigan impacts, first open-cycle plant to be built on the Great Lakes in nearly 20 years, disturbance of 11.5 acres of lake bed, request preparation of EIS, concern for mercury emissions, facility may discharge between 30 and 97 pounds of mercury into Lake Michigan in excess of Great Lakes Initiative water quality standards, wedge wire screens with 9.5 mm openings, exceeding EPA standard of 1 mm openings, impact of open cycle cooling and thermal plume on aquatic life	See Responses 1, 2, 3,5, 6 (Public hearing p. 23)
17.	29 Sep 2004	29 Sep 2004	Eric	Skindzelewski	President of Lakeshore Fisherman	Under certain conditions a mist and fog appear in area of plant, concern for impacts to commercial fishermen, disagree with mercury discharge.	Comments noted.
28.	29 Sep 2004	29 Sep 2004	Lana	DeVinny	Self	Request preparation of EIS, concern for health effects	See responses 1 & 2
29.	27 Sep 2004	29 Sep 2004	Sandy	Ivanski	Self	Concern for health effects. Request preparation of EIS.	See responses 1 & 2
30.	29 Sep 2004	29 Sep 2004	Dr. John F.	Winkler	Self	Concern for health effects. Request preparation of EIS.	See responses 1 & 2
31.	29 Sep 2004	29 Sep 2004	J. David and Judy F.	Rowland	Self	Concern for down shore erosion and mercury discharge	See responses 6 & 12
32.	29 Sep 2004	29 Sep 2004	Peter	Wardrip	Self	Request preparation of EIS, concern for health impacts, economic impact, disproportionate impacts, & affected community	See responses 1, 7, 13
33.	29 Sep 2004	29 Sep 2004	Patrick and Janice	Krukowski	Self	Concern for thermal impact, lakebed impact, intake structure, effect on migratory birds, fish impacts, health effects, alternate energy sources	See responses 1, 3 - 5, 10
34.	29 Sep 2004	29 Sep 2004	Renee	Michna-Motley	Self	Concern for air quality and health effects	Comments noted. See response 1
35.	29 Sep 2004	29 Sep 2004	Donald	Lintner	Self	Requested a thorough and complete review. Suggested running the existing plants during off-peak hours, storing the power, and meeting peak demands this way as an alternative to the proposed project, Concern for mitigation of wetland impacts. Additional alternatives sites may be available for 2 units instead of 3.	See responses 2, 4 (Public hearing p. 101)
36.	29 Sep 2004	29 Sep 2004	Rebecca	Jorgensen	Self	Area south of Bender Park does not appear to be brownfield. Requested new alternatives analysis, preparation of an EIS	See responses 2, 4 (Public hearing p. 105)

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	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
1.							
37.	29 Sep 2004	29 Sept 2004	Aileen	Mundstock	Self	Supports proposal	Comments noted.
38.	29 Sep 2004	29 Sep 2004	Katrina	Samuleson Wardrip	Self	Concern for water quality impact (erosion, sedimentation) due to wetland loss, effect of increased sediment on natural resources	See responses 5 & 11
39.	29 Sep 2004	29 Sep 2004	Irene	Michna	Self	Concern for further lake impacts and further loss of lakeshore recreation	Comments noted. (Public hearing p. 117)
40.	Not dated	29 Sep 2004	Michelle	Ortwein	Self	Concern for health effects of proposal	Comments noted. See response 1
41.	29 Sep 2004	29 Sep 2004	Rick and JoAnne	Strauss	Self	Do a full honest investigation of proposal	Comments noted. See response 2
42.	29 Sep 2004	29 Sep 2004	David	Christian	Self	In favor of plant, concern for health effects and minimization of area used for proposal	Comments noted. See response 1.
43.	29 Sep 2004	29 Sep 2004	Yvonne	Denman	Self	In favor of plant, concern for health effects and minimization of area used for proposal	Comments noted. See response 1.
44.	28 Sep 2004	29 Sep 2004	The Honorable Joseph	Kivlin, Jr.	Self	Concern for health effects of proposal	Comments noted. See response 1
45.	29 Sep 2004	29 Sep 2004	Eric	Uram	Sierra Club Regional representative	Request preparation of an Environmental Impact Statement, concern with cooling water impacts and alternative cooling systems, loss of the ecosystem values of the associated wetlands and the near-shore areas, human health impacts of plant emissions & ultimate fate of flue gas poisonous materials.	See Responses 1, 2, 3, 5 (Public hearing p. 16)
46.	29 Sep 2004	29 Sep 2004	Peter W.	Beitzel	Vice President of Metropolitan Milwaukee Association of Commerce	support the project and the use of coal at the Oak Creek site	Comments noted.
47.	Not dated	29 Sep 2004	Diane	Lange	Self	American Lung Association gave Racine County an F for ozone level in 2003, concern for fish habitat, fishing, and recreation	See Response 1, comments noted (Public hearing p. 8)
48.	29 Sep 2004	29 Sep 2004	Robert G.	Devine	Self	Support project due to urgent need	Comments noted
49.	29 Sep 2004	29 Sep 2004	Janet	weyker	Self	Pursue renewable sources of energy, requested preparation of EIS	See responses 2, 4
50.	29 Sep 2004	29 Sep 2004	Cherie	Zamel	Self	requested preparation of EIS, concern for mercury discharge	See responses 2, 6
51.	06 Oct 2004	12 Oct 2004	Barbara S.	Walter	Self	Delayed access to hospital due to more/longer trains, coal is non-renewable and ultimately not cost-effective, concern for health and thermal discharges	See responses 1, 3, 4, 14
52.	Not dated	08 Oct 2004	Jennifer	Zator	Self	Find a better alternative to coal burning, large volume intake from lake, and thermal discharge	See response 4
53.	Not dated	29 Sep 2004	Lynda	Mucha	Self	Concern for impacts of mercury discharge, air emissions, copper pipe, thermal discharge, preserving wetland, and alternatives analysis	See responses 1, 2-6, 9
54.	08 Oct 2004	12 Oct 2004		Olson Family	Self	Concern with damage to Lake Michigan, wetland loss; health impact; request further study	See responses 1 - 5
55.	1 Oct 2004	12 Oct 2004	Michael R.	Doyle	Self	Support proposal due to abundant coal supply and more economical than natural gas	See response 4

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	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
56.	06 Oct 2004	12 Oct 2004	William	Hoepner	Sheet Metal Workers Business Representative Local #18	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	Comments noted.
57.	06 Oct 2004	12 Oct 2004	John J.	Melesky, Jr.	Sheet Metal Workers Business Representative Local #18	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	Comments noted.
58.	06 Oct 2004	12 Oct 2004	Daryl	Olson	Sheet Metal Workers Business Representative Local #18	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
59.	06 Oct 2004	12 Oct 2004	Marc	Norberg	Sheet Metal Workers Business Representative Local #18 President	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
60.	9 Oct 2004	12 Oct 2004	Christopher and Victoria	Link	Self	State EIS is incomplete, concern for mercury and thermal discharge, request preparation of EIS	See responses 2, 3, 6
61.	Not dated	12 Oct 2004	Carol J.	Freda	International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
62.		12 Oct 2004	Unreadable		Business Rep Local 15 International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
63.	Not dated	12 Oct 2004	George	Hultquist	President, Honeyagers Mudjack service International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
64.	Not dated	12 Oct 2004	Dara	Sievert	International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
65.	Not dated	12 Oct 2004	Frederick	Hultz (?)	President local 8 International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
66.	Not dated	12 Oct 2004	Timothy	Shleufeld	Director BAC District Council of WI International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.

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	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
1.	Not Dated	12 Oct 2004	Ken	McClesen	Bricklayer International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
67.	Not dated	12 Oct 2004	Mark	Polengyl	International Union of Bricklayers & Allied Craftworkers District Council of WI	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
68.	07 Oct 2004	12 Oct 2004	Earl	Gustafson	WI Paper Council	In favor of proposal due to positive socio-economic impact, and energy reliability and affordability	See responses 7, 8.
69.	07 Oct 2004	12 Oct 2004	Michael J.	Chartier	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
70.	15 Oct 2004	12 Oct 2004	Jackie	Wahlig	Self	Concern for air emissions, mercury discharges, request preparation of an EIS	See responses 1, 2, 6
71.	Not dated	12 Oct 2004	Jeanne	Piper	Self	Concern for air emissions, mercury discharges	See responses 1, 6
72.	04 Oct 2004	12 Oct 2004	Nancy	Duersten	Self	Other alternatives to coal-fired plant, electric supply problem not imminent, concern for impacts to lake and shoreline	See responses 4, 5, 8.
73.	05 Oct 2004	12 Oct 2004	Jack A.	Neuhauser	Sprinkler Fitter Local 669	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
74.	05 Oct 2004	12 Oct 2004	Debra	Neuhauser	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
75.	06 Oct 2004	12 Oct 2004	Joel	Allen	Glazier, Architectural Metal Workers & Glass Workers Union Local 1204	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
76.	06 Oct 2004	12 Oct 2004	John T.	Jorgensen	Business Manager/Secretary-Treasurer Painters & Allied Trades District Council NO. 7	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
77.	06 Oct 2004	12 Oct 2004	Steven J.	Schreiner	President/local No. 781 painters Union Local No. 781	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
78.	05 Oct 2004	12 Oct 2004	Richard R.	Thabeber	Business Manger IBEW Local 430	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
79.	05 Oct 2004	12 Oct 2004	Thomas D.	Reiherzer	Self	Support proposal due to economic benefit and need for affordable and reliable energy.	See responses 7, 8.
80.							

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1.	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
81.	06 Oct 2004	12 Oct 2004	Daniel R.	Welch	President/International Vice President United Food & Commercial workers Union Local 1444		
82.	05 Oct 2004	12 Oct 2004	Robert H.	Owen, Jr.	Self	Request an EIS, object to project on the basis of need and cost-effectiveness. Base load power plants are supposed to meet base loads, not all loads. Cheaper and less damaging alternate sources of energy are available: energy efficiency, wind energy, and gas-fired combined cycle power. Provided a study for the Wisconsin Focus on Energy evaluating off-shore wind energy.	Need to specifically address report submitted. See also responses 2, 4, and 8
83.	06 Oct 2004	12 Oct 2004	Lawrence J.	Haskin	City of Oak Creek	City has limited control over location of plant. Negotiated a conditional use permit (CUP) with the Applicant that requires compliance with air quality standards and limits total plant emissions to 2000 levels. Selected a location with the least impacts to the community. CUP addresses monitoring and enforcement. Other configurations may have had fewer water and wetland impacts, but would result in substantial adverse impacts to our citizens.	Comments noted.
84.	06 Oct 2004	08 Oct 2004	Noah	Hall	National Wildlife Federation, Great Lakes Natural Resource Center	Request preparation of EIS due to potential for significant impacts, including impacts of cooling water intake, disturbance of lake shoreland and bottomland, thermal discharge, mercury discharge, and to address transboundary impacts. Project raises substantial questions regarding environmental degradation	See responses 2, 3, 5, 6, 10, 15
85.	04 Oct 2004	07 Oct 2004	Charles N.	Johnson	Self	State EIS is inadequate, need to address project changes: cooling system, pollutants in discharge, impact of primary & secondary intakes, openings, and copper based materials, thermal discharge, migratory birds and fish. Request preparation of EIS	See responses 2 – 6, 9 - 12
86.	Not dated	07 Oct 2004	KM	Maves	Self	Support use of coal vs. natural gas or nuclear power	Comments noted
87.	04 Oct 2004	07 Oct 2004	Eloise	Heimann	Self	Request preparation of EIS	See response 2
88.	03 Oct 2004	07 Oct 2004	James	Brando	Self	Support proposal due to abundance and affordability of coal.	Comments noted.
89.	Not dated	07 Oct 2004	Martin	Schall	Self	Support proposal due to abundance and affordability of coal.	Comments noted.
90.	04 Oct 2004	07 Oct 2004	Vivian	Corres	Self	Request preparation of EIS	See response 2
91.	04 Oct 2004	07 Oct 2004	Thomas J.	Glaister	Charter Manufacturing	Support proposal due to need for affordable and reliable power, once through cooling does not consume water like cooling tower technology, and infrastructure exists at current site.	Comments noted.
92.	05 Oct 2004	07 Oct 2004	Paul H.	Hunter, MD	Self	Request preparation of EIS because state EIS was inadequate	See response 2

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	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
1.							
93.	04 Oct 2004	07 Oct 2004	David M.	Selchan	Volkswagon of America WI PDC Manager	Support proposal due to need for affordable and reliable power.	Comments noted
94.	04 Oct 2004	07 Oct 2004	Al	Sorenson	Self	Question the amount of diesel required to run the proposed expansion and the resulting air quality impacts	See response 1
95.	01 Oct 2004	07 Oct 2004	Gregory W.	Betlej	Self	Request preparation of an EIS – concern for air quality impacts and effects of thermal and mercury discharges	See responses 1 - 3,
96.	Not dated	07 Oct 2004	Dale	Fuchs	Self	Support proposal due to abundance and affordability of coal.	Comments noted.
97.	04 Oct 2004	07 Oct 2004	Robert	Terwall	Cherry Electrical Products	Support proposal due to need for affordable and reliable power.	Comments noted
98.	Not Dated	07 Oct 2004	Jacqueline	Keltner	Self	Request preparation of an EIS	See response 2
99.	29 Sep 2004	07 Oct 2004	Frank N.	Egerton	U of Wi-Parkside	Proposal is not in the best interest of people, environment or economy of southeast Wisconsin; carries more liabilities than advantages. Concern for air pollution and mercury discharges. Request a thorough and unbiased Environmental Impact Statement and exploration of less destructive alternatives	See comments 1, 2, 6
100	04 Oct 2004	07 Oct 2004	William J.	Lemorande	Self	Support proposal due to need for affordable and reliable power.	Comments noted
101	02 Oct 2004	07 Oct 2004	William	Lemorande III	Self	Suggest wind energy in lieu of coal-fired power	See response 4
102	02 Oct 2004	07 Oct 2004	John and Martha	Lunz	Self	Request preparation of EIS due to concern for air emissions and mercury and thermal discharges.	See responses 2, 3, and 6
103	29 Sep 2004	01 Oct 2004	Elizabeth	Cameron	Faerietale Farm LLC & Art Studio	Request examination of project impacts	See response 2
104	Not dated	Not dated	Jeanette	Seefeldt (?)	Self	Request more thorough analysis of impacts and preparation of EIS	See response 2
105	01 Oct 2004	01 Oct 2004	Sarah	Streed	WI Interfaith Climate and Energy Campaign (WICEC)	State EIS was inadequate, reference to Harvard study, energy efficiency and distributed energy warrants further consideration, effects of greenhouse gases, new information available regarding alternate sources of power	See responses 1, 2, 4
106	Not dated	01 Oct 2004	Joyce A.	Jensen	Self	Request preparation of EIS	See response 2
107	29 Sep 2004	01 Oct 2004	Koreen	Romel	Self	Concern for air emissions and health impacts. Request preparation of EIS.	See responses 1 and 2
108	30 Sep 2004	01 Oct 2004	Bob	Lee, Jr.	Lee Plumbing Mechanical Contractors, Inc.	Support project	Comments noted
109	Not dated	01 Oct 2004	Virginia	Green	Self	Concern for impact to Lake Michigan and mercury discharges	See responses 3 and 6
110	30 Sep 2004	01 Oct 2004	Martin	Sauve	Self	Concern for environmental impacts of proposal and need for independent analysis	Comments noted.
111	30 Sep 2004	01 Oct 2004	Kenneth	Bastian	Plumbers and Steamfitters Local 118	Support project due to energy need and economic benefit	Comments noted.

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1.	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
112	Not dated	12 Oct 2004	Lorraine	Pavelcik	Self	Increased threats to health, lesser quality of life, request preparation of EIS to address concerns regarding impacts of proposed intake, mercury discharges, airborne toxics, reduced air quality, coal ash disposal, and economic effects	See responses 1 – 4, 6 - 7
113	06 Oct 2004	12 Oct 2004	Jean M.	Harvey		request preparation of EIS to address concerns regarding intake, thermal discharge, alternatives to coal, air quality impacts, loss of wetlands	See responses 1 - 5
114	08 Oct 2004	12 Oct 2004	Gerold W.	Jacobs	Teamsters, Cyhauffeurs & Helpers Local No. 43	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
115	03 Oct 2004	12 Oct 2004	Rodney	Michna	Self	Request additional analysis, consideration of other alternatives	See responses 2, 4
116	O3 Oct 2004	12 Oct 2004	Robert	Merline	Self	Request new EIS, due to concerns regarding mercury & air pollution and fish impacts associated with coal plants, and global warming	See responses 1 -4
117	06 Oct 2004	12 Oct 2004	Denise	O'Meara	Self	Request full assessment of environmental impacts	See response 2
118	06 Oct 2004	12 Oct 2004	Diane & George	Margosian	Self	Request preparation of an EIS due to environmental concerns & flawed state EIS	See response 2
119	07 Oct 2004	12 Oct 2004	Tom	Riley	Riley Construction	Support proposal due to need for affordable and reliable power, once through cooling does not consume water like cooling tower technology, and infrastructure exists at current site.	Comments noted.
120	08 Oct 2004	12 Oct 2004	Sharon	Pittsley	Self	Concern for air pollution and health effects, mercury discharge, alternatives to coal	See responses 1, 2, 4
121	06 Oct 2004	12 Oct 2004	Mary C.	Schroeder	Self	Request preparation of an EIS, concerned with health effects of air emissions, Lake Michigan impacts	See responses 1 - 3
122	06 Oct 2004	12 Oct 2004	Stan	Rosensted	Self	Request preparation of an EIS to address wetland loss, cooling water impacts, and air emissions	See responses 1 - 3
123	01 Oct 2004	12 Oct 2004	Dorothy	Bocciardi	Self	State EIS used raw costs, did not monetize pollution control and other costs such as mercury discharge. Request a report from International joint commission under the Boundary Waters Treaty of 1909, on the impact to the Great Lakes Basin Ecosystem.	See responses 7, 15
124	05 Oct 2004	12 Oct 2004	Blane	Tom	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
125	05 Oct 2004	12 Oct 2004	Moon	Charles	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
126	05 Oct 2004	12 Oct 2004	Wood	Rose	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.

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1.	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
127	08 Oct 2004	12 Oct 2004	Gerald	Vangsness	Self	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
128	08 Oct 2004	12 Oct 2004	Olatoye	Baiyewu	Self	Support proposal due to need for affordable and reliable power, once through cooling does not consume water like cooling tower technology, and infrastructure exists at current site.	Comments noted.
129	05 Oct 2004	12 Oct 2004			Boilermakers #107	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	Form letter (24 signed letters) See responses 7, 8.
130	06 Oct 2004	12 Oct 2004	Randall	Krocka	Sheet Metal Workers International Association Local #18	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
131	08 Oct 2004	12 Oct 2004	Joel	Zielke	United Association of Journeymen and apprentices of the plumbing and Piipe Fitting Industry of the U.S. and Candada	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	See responses 7, 8.
132	05 Oct 2004	Not dated	Various	Various	Various	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	322 copies of signed form letters
133	8 Oct 2004	13 Oct 2004	Steven	Poplawski	S. C. Johnson	Request preparation of an EIS due to significant impacts of proposal, including effects of cooling water intake, screens & fouling, cumulative thermal discharge, cumulative wetland loss, total accumulation of mercury, and cumulative air emissions.	See responses 1-12
134	9 Oct 2004	13 Oct 2004	Steve	Bulik	Citizens for Responsible Power	Request preparation of EIS, coal plant is not most economical, need to address environmental costs as well, mercury emissions, screen fouling, copper alloy screens, comparison to Weston plant, loss of 100 acres of primary environmental corridor	See responses 1-12
135	Not dated	14 Oct 2004	Robert	Kussow	Self	Support project due to abundance of coal in U.S.	Comment noted.
136	09 Oct 2004	14 Oct 2004	Bill	Lavelette	Self	Request preparation of EIS, to verify energy need, reference to a 7/1/04 report: "A Study of Wind Energy Development in Wisconsin" reference to a risk-sharing contract, address questions raised on state EIS, impacts of cooling water intake and thermal discharge, and impact of bluff excavation	See responses 2 – 5, 8
137	07 Oct 2004	14 Oct 2004	Various	Various	Various unions	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	10 form letters See responses 7, 8.

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1.	DATE OF LETTER	DATE RECEIVED	NAME		REPRESENTING	SUMMARY OF SUBSTANTIVE COMMENT(s)	CORPS OF ENGINEERS RESPONSE
138	05 Oct 2004	14 Oct 2004	Various	Various	Various	Support proposal due to need for coal-based facilities, infrastructure exists, issues have been addressed by Applicant and state, and proposal will have positive economic impacts	5 form letters See responses 7, 8.
139	Not dated	15 Oct 2004	Bette	Arey	Self	Request thorough analysis of impacts, thermal discharge, health effects of coal use.	See responses 1-3.
140	8 Oct 2004	15 Oct 2004	Pittsley	Bruce	Self	Concern for down-shore erosion, cooling water intake and thermal discharges.	See responses 3, 12
141	30 Sep 2004	18 Oct 2004	Carol	Oxley	Target Corporation president	Support project due to need for affordable reliable energy.	Comments noted.
142	12 Oct 2004	21 Oct 2004	Ann	Alexander	Environmental Counsel to Attorney General of Illinois	Request preparation of EIS due to concern with mercury discharge as a significant environmental impact and significant issues regarding open cycle cooling and impacts on fish populations	See responses 2 – 4 and 6.
143	12 Oct 2004	20 Oct 2004	Jane	TenEyck	Chippew Ottawa Resource Authority	Concern for negative effect on fisheries and ecosystem of Lake Michigan, coastal wetland impacts. Corps has trust responsibility under Treaty of 1836, 7 Stat. 491, air pollution, increased mercury deposition in the 1836 treaty area.	See responses 1, 3, 5-6, 10-12, 16
144	22 Oct 2004	25 Oct 2004	Jon	Richards	Assistant Democratic Leader 19th District Milwaukee	Support request for preparation of an EIS, expressed concern regarding cooling water intake impacts, water quality and wetland impacts, and toxins	See response 2,3, 6
145	Not Dated	29 Oct 2004	Bob	Opem	Self	Request preparation of EIS	See response 2

Appendix B
Phase I Site Selection Process Summary Table

Table 1. Sites Eliminated in the PAA

SITE	Reason for Site Elimination								
	Phase I		Phase II						Phase III
	Regional Transmission System Constraints	Incapable of Supporting Coal-Fired Power Generation	Transmission Infrastructure Constraints	Rail Infrastructure Constraints	Size Constraints	Closed Cycle Cooling Required	Potential for On-site Wetland Impacts	Potential for Off-site Wetland Impacts	Not the LEDPA
AL-1	X								
AL-2	X								
AL-3	X								
AL-4	X								
BA- 1	X								
BA-2	X								
DE-1	X								
DE-2	X								
DE-3	X								
DE-4	X								
DE-5 (Escanaba)	X								
DE-6	X								
DE-7 (Ford River)	X								
DE-8	X								
DE-9	X								
DI-1	X								
DI-2	X								
DI-3	X								
FR-1 / WPSFR-1	X								
FR-2/WPSFR-2 (Florence)**	X								
FR-3 / WPSFR-3	X								
GO- 1	X								
IR-1	X								
IR-2	X								
ME-2 / WPSME-2	X								
ME-3 / WPSME-3	X								
MR-1	X								
MR-2	X								
MR-3	X								

SITE	Reason for Site Elimination								
	Phase I		Phase II						Phase III
	Regional Transmission System Constraints	Incapable of Supporting Coal-Fired Power Generation	Transmission Infrastructure Constraints	Rail Infrastructure Constraints	Size Constraints	Closed Cycle Cooling Required	Potential for On-site Wetland Impacts	Potential for Off-site Wetland Impacts	Not the LEDPA
MR-4	X								
MT-1 / WPSMT -1	X								
MT-2 / WPSMT -2	X								
MT-3 / WPSMT -3	X								
MT-7 / WPSMT -7	X								
MT-8 / WPSMT -8	X								
MT-9 / WPSMT -9	X								
Necedah	X								
Plover	X								
ON-1	X								
ON-2 (Ontonagon)	X								
ON-3	X								
ON-4	X								
SC-1	X								
SC-2	X								
SC-3	X								
SC-4	X								
SC-5	X								
SC-6	X								
WPL-1 (Biron)	X								
WPL-2	X								
WPL-3 (Cassville)**	X								
WPL-4	X								
WPL-6 (Port Edwards)**	X								
WPSLI-1	X								
WPSLI-2	X								
WPSLI-3	X								
WPSLI-4	X								
WPSLI-5	X								
WPSLI-6	X								

SITE	Reason for Site Elimination								
	Phase I		Phase II						Phase III
	Regional Transmission System Constraints	Incapable of Supporting Coal-Fired Power Generation	Transmission Infrastructure Constraints	Rail Infrastructure Constraints	Size Constraints	Closed Cycle Cooling Required	Potential for On-site Wetland Impacts	Potential for Off-site Wetland Impacts	Not the LEDPA
WPSOD-1	X								
WPL-10 (Wisconsin Dells)	X								
WEU-1	X								
WEU-2	X								
WEU-3	X								
WEU-4	X								
WEU-5	X								
WEU-6	X								
WEU-7	X								
WEU-8	X								
WEU-9	X								
WEU-10	X								
WEU-11	X								
WEU-12	X								
WEU-13	X								
WEU-14	X								
WEU-15	X								
WEU-16 (Rudolph)**	X								
WEU-17	X								
WENU-1	X								
WENU-2	X								
WENU-3	X								
WENU-4	X								
WENU-5 (Twin Falls)**	X								
WENU-6	X								
WENU-7	X								
WENU-8	X								
WENU-9	X								
WENU-10	X								
WENU-11	X								

SITE	Reason for Site Elimination								
	Phase I		Phase II						Phase III
	Regional Transmission System Constraints	Incapable of Supporting Coal-Fired Power Generation	Transmission Infrastructure Constraints	Rail Infrastructure Constraints	Size Constraints	Closed Cycle Cooling Required	Potential for On-site Wetland Impacts	Potential for Off-site Wetland Impacts	Not the LEDPA
WENU-12	X								
KN-2		X							
ME-1 / WPSME-1		X							
ME-4 / WPSME-4		X							
ME-5 / WPSME-5		X							
ME-6 / WPSME-6		X							
ME-7 / WPSME-7		X							
MT-5 / WPSMT -5		X							
MT-6 / WPSMT -6		X							
MT-10 / WPSMT -10		X							
OU-1		X							
OU-2		X							
OU-4		X							
OU-5		X							
OU-6		X							
RA- 1		X							
WA-1 (Trenton)		X							
Z-2		X							
Z-3		X							
WPL-5 (Newton)**		X							
WPL-7 (Rock River)**A117		X							
WPL-8		X							
WPSBR-1		X							
WPSBR-2		X							
WPSKW-1		X							
Z-1 (Koshkonong)*			X	X		X	X	X	
XOZ-2 (Port Washington)					X				
MT-4 / WPSMT-4 (Wausaukee)**			X	X		X	X	X	
WPSDR-1			X	X		X		X	
WPSDR-2			X	X		X	X	X	

Appendix C
WDNR Chapter 30 Permit

RG

Before The
State Of Wisconsin
DIVISION OF HEARINGS AND APPEALS

In the Matter of the Waterway and Wetland Alterations Relating to the Wisconsin Electric Power Company Oak Creek Power Plant Expansion, Called the Elm Road Generating Station	Case Nos. 3-SE-01-41-0005-0019 & 1456MW

FINDINGS OF FACT, CONCLUSIONS OF LAW AND PERMIT

Wisconsin Electric Power Company, 231 West Michigan Street, Milwaukee, Wisconsin, 53201, applied to the Department of Natural Resources for permits to alter waterways and wetlands at and near its existing Oak Creek Power Plant, located in the City of Oak Creek with related facilities in the Town of Caledonia. The proposed activities are listed below:

On the bed of Lake Michigan under Wis. Stat. § 30.21
Place fill on the bed for the purposes of dock extension for harbor facilities and public utility structures and appurtenances, place and operate intake and discharge structures, stabilize the shoreline and dredge materials from the bed.

Navigable Waterways under Wis. Stat. §§ 30.12, 30.123 and 30.20
Place bridges and culverts over or in navigable waterways, and dredge materials from the bed, for the purposes of railroad expansion and road construction. If any construction occurs within Racine County, the Company has also submitted permit applications under 30.19 to grade more than 10,000 square feet on the banks of a navigable waterway and to construct ponds within 500 feet of a navigable waterway.

Wetland Impacts under 401 Water Quality Certification, Wis. Stat. § 281.36 and Wis. Admin. Code NR 103 and 299
Place fill and or disturb wetlands as a result of power plant expansion, road construction and railroad improvements.

The proposed Elm Road Generating Station (ERGS) will add new coal-fired generating units at the existing Oak Creek Power Plant site, as a component of the Company's *Power the Future* program. The Company applied for a Certificate of Public Convenience and Necessity (CPCN) from the Public Service Commission of Wisconsin (PSCW or PSC) under Wis. Stat. § 196.491.

Exhibit A

On November 10, 2003 the PSCW issued a CPCN for the ERGS project in which it approved construction of two new 615 megawatt coal-fired generating units and construction of common facilities sufficient to accommodate up to 3000 megawatts of generation at the site. The site approved by the PSCW is referred to as the "North Site-CUP", and is the site for which the Company is seeking the permits to alter waterways and wetlands.

The electrical generating facilities will be located in the City of Oak Creek, Milwaukee County in the SW ¼ and NW ¼ of Section 31, T5N, R23E and the NE ¼ and SE ¼ of Section 36, T5N, R22E. Related facilities will be located in the City of Oak Creek, Milwaukee County in portions of Section 31, T5N, R23E and lakebed adjacent to Section 31. Related facilities will also be located in Section 36, T5N, R22E and in the Town of Caledonia, Racine County in portions of Section 6, T4N, R23E and Section 1, T4N, R22E. Road construction and railroad improvements will also be located in the Town of Caledonia, Racine County in portions of Section 1, T4N, R22E and Sections 6, 7 and 18 of T4N, R23E.

An Environmental Impact Statement (EIS) on the proposed project has been jointly prepared by the Public Service Commission of Wisconsin and the Wisconsin Department of Natural Resources.

The Department of Natural Resources issued a Notice of Proposed Power Plant Expansion which stated that unless written objection was made within 30 days of publication of the Notice, the Department may issue a decision without a hearing. Timely objections were received. On March 25, 2004, the Department filed a Request for Hearing with the Division of Hearings and Appeals (the Division).

Pursuant to due notice hearing was held on August 23-25, 2004, at Oak Creek, Wisconsin, Jeffrey D. Boldt, administrative law judge (the ALJ) presiding. The parties submitted written briefs. The last brief was received on October 6, 2004.

In accordance with Wis. Stat. § 227.47 and 227.53(1)(c) the PARTIES to this proceeding are certified as follows:

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FINDINGS OF FACT

1. Wisconsin Electric completed filing an application with the Department for permits under Wis. Stat. §§ 30.12, 30.21, 30.123, 30.20 30.19, and for Section 401 Water Quality Certification at a project site near its existing Oak Creek Power Plant. The project is located in the City of Oak Creek and Town of Caledonia in Milwaukee and Racine County. The Department and the applicant have fulfilled all procedural requirements of Wis. Stat. § 30.02 and 30.12. Wisconsin Electric has filed an application for the following permits: (1) to place fill on the bed of Lake Michigan for the purpose of dock extension, for the placement of an intake and discharge structure and to stabilize the shoreline, (2) to remove materials from the bed of Lake Michigan, (3) to place bridges and culverts over or in navigable tributaries to Lake Michigan and remove materials from the bed of those tributaries for the purposes of railroad expansion and road construction, (4) to grade more than 10,000 square feet and to construct ponds within 500 feet of a navigable waterway in Racine County and (5) to impact wetlands under 401 Water Quality Certification, Wis. Stat. § 281.36 and Wis. Admin. Code Chapters NR 103 and 299 as a result of a power plant expansion, road construction and railroad improvement project known as the Elm Road Generating Station (ERGS).

2. The applicant owns real property located in the City of Oak Creek, Milwaukee County and the Town of Caledonia, Racine County also described as being a part of Section 1, T4N, R22E, all of Section 6, T4N, R23E, part of Section 35, T5N, R22E, all of Section 36, T5N,

R22E, part of Section 31, T5N, R23E, part of Section 12, T4N, R22E, and part of Section 7, T4N, R23E. The above-described property abuts Lake Michigan and other tributaries which are navigable in fact at the project site.

3. The applicant proposes to place fill on the bed of Lake Michigan for the purposes of dock extension, for the placement of an intake and discharge structure and to stabilize the shoreline. Further, the applicant proposes to dredge materials from the bed of Lake Michigan and to place bridges and culverts over or in navigable tributaries to Lake Michigan and dredge materials from the bed of those tributaries for the purposes of railroad expansion and road construction. The applicant proposes to grade more than 10,000 square feet and to construct ponds within 500 feet of a navigable waterway in Racine County and to impact wetlands subject to 401 Water Quality Certification, Wis. Stat. § 281.36 and Wis. Admin. Code chs. NR 103 and 299 as a result of power plant expansion, road construction and railroad improvements.

4. The purpose of this project is to construct two coal-fired electric power generating units at the existing Oak Creek Power Plant. Each unit will have a minimal full load generating capability of 615 net megawatts. The project also includes support systems including providing cooling water, a full delivery system and transmission connections.

5. On November 10, 2003, the PSC issued a CPCN and Final Order authorizing construction of ERGS at a site known as the North Site-CUP alternative. (Ex. 1) As approved, in the CPCN, the ERGS project consists of constructing two 615-megawatt supercritical pulverized coal (SCPC) generating units and associated facilities.

6. The overall construction plan is described in the prefiled direct testimony of Wisconsin Electric witnesses Scott Patulski and Gregory Kasel. Exhibit 28 is a series of drawings detailing the proposed construction. Construction of the project will entail the following:

> Bluff Excavation. Approximately 6 million cubic yards of the existing bluff along Lake Michigan will be excavated to facilitate the placement of facilities near lake level so that the SCPC units may utilize a once through cooling system. The excavated material will be placed in several stock piles and berms located throughout the approximately 1,000 acres owned by Wisconsin Electric.
>
> Water Intake Structure. A water intake system will be constructed to provide cooling water for the existing Oak Creek Power Plant and the two new SCPC units. Construction of the water intake system will require boring a 24-27 foot diameter tunnel approximately 130 feet below the bed of the lake. The tunnel will extend 7,900 feet from the shore out into Lake Michigan where the depth of the water is approximately 43 feet. Four 10-12 foot diameter downshafts will be drilled down about 130 feet from the lake bottom to the top of the tunnel. These downshafts will convey water from four manifold pipes that will be 9 foot in diameter and 112 feet long. Each manifold pipe will contain six wedge wire T-screens (24 total T-screens) for the intake of water. These T-screens will be 8 feet in diameter and approximately 32 feet long with a slot size of 9.5 millimeters and a

lakebed clearance of 5 feet. To protect the T-screens, riprap will be placed around the intake area. The total amount of lakebed occupied by the T-screens and the riprap is approximately 100 feet by 580 feet or 1.33 acres. The installation of these pipes, scour protection and downshafts will require approximately 11,500 cubic yards of materials to be dredged from the bed of Lake Michigan.

Discharge Structure. A new discharge structure will also be constructed. The new discharge structure will include a seal well and two jetties constructed of either sheet pile or consisting of a large rubble mound which extend 500 feet into Lake Michigan. The jetties will create an 80-foot wide channel that will be lined with rock and will require about 25,000 cubic yards of material to be dredged from the bed of Lake Michigan. The discharge structure will occupy about 3.1 acres of lakebed. Due to the public's interest in fishing near the discharge structure, the north jetty will be constructed to provide a public fishing pier. A separate public access and parking area associated with the fishing pier is proposed for security and safety purposes.

Dock Extension. The existing dock, built in the early 1950s as part of the existing Oak Creek Power Plant, is approximately 18 acres. As part of the project, the dock will be extended by approximately 11.7 acres; approximately 7.7 acres will be on the bed of Lake Michigan (below the ordinary high water mark) and approximately 4.0 acres will be on the upland (above the ordinary high water mark). Shoreline protection for the dock and dock extension and for the shoreline between the dock and the south jetty of the discharge structure will be provided by creation of a rubble mound containment dike that will occupy approximately 2.6 acres of lakebed. Facilities located on the existing dock and dock extension will be materials handling and processing facilities for limestone and gypsum which will be delivered to or transported from the site by barge. Coal is currently stored on the dock; it is proposed that coal storage on the dock be phased out over time.

Barge, Rail and Vehicular Access. To construct a back-up water intake system and accommodate transportation by barge of construction equipment, limestone and gypsum, about 123,500 cubic yards in the area adjacent to the existing intake channel will be dredged. Coal will be delivered by rail. Therefore, railroad improvements are needed to avoid the blockage of several local roads. An underpass will be constructed at Six Mile Road. Seven Mile Road will be closed with two cul-de-sacs. These road improvements will allow for the construction of additional railroad tracks to the existing railroad corridor and an improvement to the car unloading and maintenance systems. The railroad improvements will result in the modification of seven existing culvert crossings over four navigable waterways. There will also be new construction access roads, employee entrance roads and a public bike trail constructed as part of the project. These new or modified roads and the trail will result in six crossings over three navigable waterways.

Wetland, Stream and Environmental Corridor Impacts. The new road and railroad crossings will result in new or modified bridge/culvert crossings over navigable

waterways which are tributary to Lake Michigan and a non-navigable waterway will be impacted by the excavation of the bluff. The project will directly impact 23.47 acres of wetland (of over 100 acres delineated within the project boundary) either through the placement of fill associated with the railroad modifications and access road construction, or excavation of the bluff. Approximately 57 acres of primary environmental corridor and isolated natural resource area (of approximately 322 acres delineated within the project boundary) will be impacted by the construction activities.

7. Wisconsin Electric is the riparian owner of the property on which ERGs is proposed to be constructed. (Schubilske; Hopkins)

8. The construction, maintenance and operation of the proposed structures in Lake Michigan, including the dock extension, shoreline stabilization, cooling water intake and discharge structures, will not materially obstruct navigation. (Patulski; Kasel; Hopkins; Eggold)

9. The construction, maintenance and operation of the proposed structures in Lake Michigan, including the dock extension, shoreline stabilization, cooling water intake and discharge structures, will not result in the use of private property not owned by Wisconsin Electric. (Patulski; Schubilske; Kasel)

10. The dredging associated with construction of the proposed structures in Lake Michigan, including the dock extension, shoreline stabilization, cooling water intake and discharge structures, will not adversely affect water quality in Lake Michigan, will not increase water pollution and will not cause environmental pollution as defined in Wis. Stat. § 283.01(6m). (Klump; Helker)

11. The impacts of the construction dredging will be short-lived and minor. (Klump; Helker)

12. The Division has modified the proposed permit to limit authorized maintenance dredging to a period not to exceed five years. After this period, all future maintenance dredging shall be subject to the permitting requirements of Wis. Stat. § 30.20. This amended condition is consistent with DNR practice for maintenance dredging as described in the Waterway and Wetland Handbook, Chapter 120, p. 12.

13. The facilities proposed to be located on the dock extension are authorized by Wis. Stat. § 30.21. (Patulski; Hopkins) The dock structure is necessary to efficiently and safely handle the quantities of limestone necessary to operate air pollution control equipment for the ERGS units, and the gypsum that is produced as a by-product of wet flue gas desulfurization. (Patulski; TR pp. 26-30)

Section 30.21 Issues

14. On September 2, 2003, the City of Oak Creek adopted a resolution under Wis. Stat. § 30.21 which granted a permit to Wisconsin Electric to construct, maintain and operate the ERGS project. (Haskin; Ex. 404)

15. The relationship between Wisconsin Electric and ERGS LLC is complicated. Wisconsin Electric created an elaborate set of lease agreements. The facility lease (Ex. 203) is one of three leases: there is also a ground lease, whereby Wisconsin Electric will lease the land to ERGS LLC, and a sublease, whereby ERGS LLC will sublease the land back to Wisconsin Electric during the term of the facility lease (*i.e.*, Wisconsin Electric's period of maintenance and operation). (TR p. 988) The facility lease for ERGs LLC, as approved by PSC, is for 30 years. WEPCO has the option to renew that lease. (Ex. 203 at ¶ 14.2) Additionally, WEPCO has the option to purchase the facility, either at the end of the lease term or in the event ERGS LLC chooses to divest. (Id. at ¶ 14.4) Taken together, these leases constitute a lease generation contract within the meaning of Wis. Stat. § 196.52(9)(a)(3). (Ex. 1, p. 35)

16. The lease agreements comport with the requirements of Chapter 196 relating to Regulation of Public Utilities. (Id. p. 43) Chapter 196 imposes eleven separate conditions for such leased generation contracts under § 196.795(5)(k)(3). (*Id.* p. 43) The WPSC approved the proposal of Wisconsin Electric to authorize treatment of a leased generation contract, and maintained "jurisdiction to ensure that the construction of ERGS is completed as provided in the lease generation contracts." (*Id.*)

17. Wisconsin Electric is a public utility as defined in Wis. Stat. § 196.01 and as that term is used in Wis. Stat. § 30.21. (Schubilski; Ex. 1) The leased generation contracts comport with Chapter 196 and do not alter the status of the applicants as a "public utility" within the meaning of Wis. Stat. § 30.21. (*Id.*, Schubilski, TR pp. 198-199, Ex. 21)

18. The objectors established and the DNR concedes that the plain language of Wis. Stat. § 30.21 requires that no construction related to this permit shall be undertaken prior to a determination relating to the grant or denial of a WPDES permit authorizing operation of the water intake structure. (Hopkins, TR pp. 621-622) Accordingly, Permit Condition 43 is modified as follows:

> You shall not construct, maintain or operate the new intake structure or the new discharge structure until the Department issues a new or reissued Wisconsin Pollutant Discharge Elimination System permit for the intake structure and discharge.

19. The facilities proposed to be located on the dock extension are authorized by Wis. Stat. § 30.21. (Patulski; Hopkins)

Other Chapter 30 Issues

20. The placement of culverts and bridges as proposed by Wisconsin Electric will not materially obstruct navigation in any navigable waterway. (Schumacher; Hopkins).

21. The placement of culverts and bridges as proposed by Wisconsin Electric will not reduce the effective flood flow capacity of any navigable waterway. (Schumacher; Hopkins; Bruch)

22. The dredging associated with the placement of culverts and bridges as proposed by Wisconsin Electric will not adversely affect water quality in any navigable waterway, will not increase water pollution and will not cause environmental pollution as defined in Wis. Stat. § 283.01(6m). (Schumacher; Hopkins)

23. The placement of bridges and culverts as proposed by Wisconsin Electric will not be detrimental to the public interest. (Schumacher; Hopkins)

24. The grading in Racine County associated with the placement of bridges and culverts and the construction of road and railroad improvements will not injure public rights or interests, including interests in fish and game habitat, and will not cause environmental pollution. (Hopkins)

NR 216 Issue

25. The design of the proposed stormwater ponds complies with the requirements of NR 216. Construction of these ponds and the Stormwater Pollution Prevention Plan and Erosion and Sediment Control and Stormwater Management Plan submitted by Wisconsin Electric will protect against injury to public rights or interests, including fish and game habitat, and will not cause environmental pollution. (Kasel; Hopkins; Wood).

Wetland Issues

26. Wisconsin Electric made its first submittal for a Chapter 30 permit for ERGS in June 2002. In early 2003, DNR and Wisconsin Electric discussed the appropriate scope of the practical alternatives analysis (PAA) required by NR 103. DNR also consulted with staff of the Public Service Commission in light of the fact that both DNR and PSC have regulatory responsibilities with respect to approval of ERGS. (Lee; Hopkins)

27. In the first half of 2003 Wisconsin Electric and DNR reached an understanding that Wisconsin Electric would prepare preliminary PAA materials looking at each of the four sites being considered by PSC independently of the other sites. (Hopkins; Lee) On June 30, 2003, Wisconsin Electric submitted preliminary PAA materials containing wetland delineation and site plans for each of the four sites so that the DNR could evaluate them for the PSC. (Id.)

28. The Public Notice published in August 2003 advised the public that the PSC had two sites under consideration – the "primary" and the "alternative" sites – and would approve

one or the other, but not both, if the PSC determined the ERGS facilities were needed. The Public Notice further explained that Wisconsin Electric would need to obtain DNR permits for the site approved by the PSC, and that if a contested case hearing was held it would be scheduled to take place after the PSC made its decision so that the subject of the hearing would be Wisconsin Electric's application for DNR permits for the site approved by the PSC. (Ex. 23)

29. DNR provided testimony during the PSC proceedings that specifically identified the number of wetland acres that were expected to be impacted on each site and expressed an opinion to the PSC as to which site was the preferable site from the standpoint of impacts to wetlands. DNR would have advised the PSC if DNR considered any of the sites to be unpermittable, but did not do so because DNR did not consider any of the four sites to be unpermittable. Based on its review of the preliminary PAA materials, DNR was prepared to accept whichever of the four sites the PSC approved and to proceed with evaluating a Chapter 30 permit application, including PAA materials, for that site. (Hopkins)

30. The Department of Natural Resources Water Management Specialist Heidi Hopkins testified that the DNR decided to limit the scope of its review of practicable alternatives to the site approved by the Commission, pursuant to Wis. Admin. Code § NR 103.08(1). Hopkins noted that Wisconsin Admin. Code NR 103 specifically provides that "the Department, upon request, meet with a project proponent and other interested persons to make a preliminary assessment of the scope for an analysis of alternatives. . . ." Wis. Admin. Code § NR 103.08(1)

Hopkins offered two essential reasons for the DNR's approach to the PAA in this matter. First, the Department did not believe it was appropriate to require a full PAA for each site being considered by the PSC in the context of its review of the CPCN. (Hopkins, TR p. 570) Second, the DNR agreed to essentially defer to the PSC with respect to which sites were "available and capable of being implemented" because the PSC has a more comprehensive set of factors to consider when reviewing the siting of a power plant facility. Hopkins testified as follows: "They look at more things and have more experts than the department could ever evaluate such as modification—railroad modifications and transportation issues and the need of having that type of facility, and also they look at various alternatives regarding what type of energy should be generated and how it should be generated which the department does not have experts for or the capability of reviewing that detail of analysis or doing that evaluation." (Hopkins, TR p. 571).

31. The Department's determination to limit the scope and content of the PAA was within its regulatory discretion and authority under Wis. Admin. Code NR 103.08(1). Given the complexity of the power plant siting process, the Department's decision to limit the PAA process was reasonable under the then-existing regulatory framework.[1] (Hopkins)

32. As part of the CPCN process, the PSC specifically considered the Development Agreement and the conditional Use Permit that had been negotiated between the City of Oak

[1] It should be noted that under the current regulatory scheme, the DNR would be required to limit the PAA as it has in this case. (*See*: Wis. Stat. § 30.025) While the new statute does not provide a legal authority for the Department's actions in this case, it does go to the reasonableness of the DNR's exercise of discretion under the then-existing regulatory process. (Hopkins, p. 575)

Creek and Wisconsin Electric. (Haskin, TR pp. 7-8) Consideration of local land use and development plans and environmental values are required elements of the PSC review. *See,* Wis. Stat. § 196.491(3)(d). No other site had any comparable local approval or comparable local controls. Given the extensive review of multiple factors considered by the PSC, and the fact this was the only site in which local approvals were in place, it was a reasonable exercise of discretion to limit the PAA review.

33. Following the November 10, 2003 CPCN decision in which PSC selected the North Site-CUP, rejected the three other sites and authorized Wisconsin Electric to construct two of the three proposed generating units, Wisconsin Electric provided revised PAA materials relating exclusively to the North Site-CUP. DNR reviewed those materials and in a letter dated January 27, 2004 requested additional information. The January 27, 2004 letter included a request that Wisconsin Electric review an "alternative alignment" to see if it could be implemented to eliminate some of the bluff grading and reduce wetland impacts, and other questions concerning wetland impacts at the North Site-CUP and potential ways to reduce or eliminate them. Wisconsin Electric's February 9, 2004 response addressed all of DNR's questions, including explanations of the environmental consequences, impacts on the scope of the construction project, impacts on the construction schedule, logistics and sequence, future operating and maintenance inefficiencies, and cost implications which made the "alternative alignment" impracticable. Wisconsin Electric's February 9, 2004 response satisfied DNR's request, and DNR determined that the PAA materials submitted by Wisconsin Electric complied with NR 103 and NR 299. (Lee; Hopkins; Exhibit 26)

34. Within the Project boundaries over 130 wetlands were identified and delineated by staff from the Southeastern Wisconsin Regional Planning Commission (SEWRPC), Graef, Anhalt, Schloemer and Associates (GAS) or the Department. The total acreage of wetlands delineated at this site is over 100 acres. A majority of the wetlands (over 93 percent) are two acres or less in size. However, eight of the wetlands are over 2 acres in size and account for 50 acres of wetland. The largest wetland on the site is 11.9 acres. There are various types of wetlands present including but not limited to fresh (wet) meadow, Southern wet to wet-mesic lowland hardwood forests and shallow marsh. Functional Values Assessments were completed for all of the wetlands located within the project boundaries by GAS and the Department. (Hopkins, TR p. 597)

35. Noel Cartwright testified on behalf of Wisconsin Electric that "the wetlands that will be impacted on the North Site-CUP are not unique, are relatively small and isolated in nature, many have already been disturbed and, therefore, the impacts will not result in a significant loss to the regional ecosystem." (TR p. 383) Further, that the two highest quality wetlands, Plant Community Areas 1 and 6 discussed by Dr. Reed, will not be impacted by the project because of the site layout re-design. (Cartwright, TR p. 383) Dr. Reed conceded this point on cross-examination. (Reed, TR pp. 858-875)

36. The site configuration for ERGS proposed by Wisconsin Electric on the North Site-CUP avoids detrimental impacts to wetland functional values to the maximum extent possible. (Kasel; Lee; Hopkins)

37. Approximately 23.47 acres of wetlands are impacted by the site configuration proposed by Wisconsin Electric on the North Site-CUP. Wisconsin Electric has taken all practicable measures to minimize direct adverse impacts to the functional values of those affected wetlands. (Kasel; Hopkins)

38. Given the loss of wetlands and the significance of this resource, the applicants should submit a plan to minimize secondary detrimental impacts to wetlands not filled in conjunction with this project. (Reed; Hopkins) The plan shall include but not be limited to reducing siltation and sedimentation, preventing invasive exotic species from entering into wetland areas, and maintaining the existing hydrology and habitat values to the extent practicable during construction and operation of the proposed facilities. (Reed, TR p. 876) Further, because of the loss of the critical wetland habitat, the applicants shall take all reasonable steps to preserve valuable habitat in areas directly contiguous to remaining wetlands (TR pp. 858-875) Special care should be taken to preserve state threatened species in remaining wetland areas and directly contiguous upland areas. (TR p. 882-883)

39. Dr. Reed suggested that filling the 23.47 acres would result in a detrimental cumulative impact to wetland functional values. (TR p. 859) The Division finds that while there would be some detrimental cumulative impact, it is not sufficient to warrant denial of the water quality certification. First, power generating plant applications are complex and uncommon. It is unlikely that issuance of the Water Quality Certification will result in any significant increase in "similar activities in the affected area." (*See*: NR 103.08(3)(d)) Second, the most important wetlands have largely been preserved and will be protected and enhanced by the plan to minimize secondary impacts.

WEPA Issues

40. An environmental impact statement (EIS) on the proposed project was jointly prepared by the Public Service Commission and the Department of Natural Resources. The EIS is contained in three volumes totaling approximately 900 pages. The Public Service Commission and Department of Natural Resources held EIS scoping sessions in Oak Creek to provide the public information regarding the project and to receive the public's input. A joint draft EIS was issued on April 21, 2003 and broadly distributed. There was a 45-day comment period during which meetings were held with the public in the affected area. Following the comment period, a joint final EIS was issued which reflected comments received and new information collected. A contested case hearing was held after the final EIS was issued at which any interested person was provided an opportunity to present evidence regarding environmental impacts and cross-examine members of the Public Service Commission and Department of Natural Resources staff involved in the preparation of the EIS. Interested persons were provided further opportunities in this proceeding to address the environmental impacts of the project including any of those associated with the change in the design of the water intake structure. (Ex. 1)

41. The Department of Natural Resources issued a Record of Decision on December 17, 2003. The Record of Decision determined that the project complies with Wis. Stat. § 1.11 and Wisconsin Admin. Code Ch. NR 150.

42. The Public Service Commission in its decision authorizing construction of the project determined that it had complied with Wis. Stat. § 1.11.

43. Both the Department of Natural Resources' December 17, 2003 decision and the Public Service Commission's decision are the subject of a judicial review proceeding in Dane County Circuit Court. This review includes the issue of whether any supplementation of the EIS is appropriate.

44. The Department of Natural Resources has complied with the procedural requirements of Wis. Stat. § 1.11 and Wis. Admin. Code ch. NR 150 regarding assessment of environmental impact. (*See*: Discussion for further reasoning on this issue)

SUMMARY

There were numerous disputed issues in this matter, but three subjects were the focus of much of the testimony. First, the objectors raised questions regarding the sufficiency of the PAA and other concerns relating to the Department's wetland review under NR 103. The Division finds that the DNR properly exercised its regulatory discretion in its limitation of the PAA under NR 103. The Division further finds that the project meets the standards of NR 103, and that the Water Quality Certification (WQC) should be issued, with one additional condition to reduce secondary impacts to remaining wetlands on the project site.

The second group of issues related to whether the applicants meet the definition of a "public utility" within the meaning of Wis. Stat. § 30.21. The Division finds that the applicant is a public utility eligible to place the intake structure under Wis. Stat. § 30.21. The fact that the project will be structured as a lawful "lease generation" contract does not impact the status of the applicants as a "public utility" within the meaning of Wis. Stat. § 30.21. A related issue under this statute is whether a WPDES operation permit is required prior to construction of the water intake structure on Lake Michigan. The Division finds that the plain language of the statute requires approval of such an operation permit prior to commencement of construction.

The third issue related to compliance with WEPA. The Division has limited authority as it relates to WEPA compliance.[2] The Division finds that the procedural requirements of that statute were met, and that the substantive issues relating to WEPA compliance are properly before the Circuit Court.

SUMMARY OF PERMIT MODIFICATIONS

Based upon the Findings, and the record as a whole, the proposed permit is modified with respect to three conditions. Permit Condition #38 is modified to limit maintenance dredging to a period of five years and to require issuance of a dredging permit after this period of time. This brings the permit into compliance with standard Department practice as it relates to maintenance dredging. Permit Condition #43 is revised to make it clear that no construction on the new water

[2] *See:* Ruling on Motion Limiting Issues, Division ALJ Boldt, July2, 2004. All prior rulings are hereby incorporated by reference, including the June 4, 2004, Oral Ruling Limiting Issues.

intake structure or new discharge structure can be undertaken prior to issuance of a new or reissued WPDES permit. This brings the permit into compliance with the language of Wis. Stat. § 30.21. A new permit condition #52 has been added to require preparation of a plan to minimize secondary impacts to remaining wetlands on the subject parcel. This condition is reasonable and necessary to protect, preserve and enhance water-quality related wetland functional values and to meet the standards of NR 103.

DISCUSSION

Wetland Issues

The first issue is whether the practicable alternatives analysis (PAA) was sufficient as it relates to compliance with NR 103. The objectors argue that the PAA was on its face inadequate because the DNR concedes that it did not consider alternative off-site locations as part of the PAA. This indeed is the usual practice for many development projects.[3] The PAA issue is fairly close, but the Division concludes that the DNR properly exercised its regulatory discretion in limiting consideration of available "alternatives" in connection with this project.

Ms. Hopkins testified that the DNR ". . . decision was that the provisions of Wis. Stat. ch. 196 and the decision by the PSCW in the CPCN would limit the scope and content of the PAA to the approved facilities and site footprint." (Hopkins Direct, TR p. 601) Further, the DNR deemed the PAA submittals of Wisconsin Electric to be sufficient for the Oak Creek site. (Id., p. 599) Both conclusions were appropriate, given the complex interplay between the PSC and the DNR regulatory review processes.

The Department's determination to limit the PAA was within its regulatory discretion and authority under Wis. Admin. Code NR 103.08(1). That provision provides as follows:

> NR 103.08 Department determinations. (1) . . . The department shall, upon request, meet with a project proponent and other interested persons to make a preliminary assessment of the scope for an analysis of alternatives and the potential for compliance with this chapter.

It was reasonable for the DNR to limit the PAA to the site chosen in the CPCN. Given the complexity of the power plant siting process, the Department's decision to limit the PAA process was a reasonable use of the regulatory authority set forth in Wis. Admin. Code NR 103.08. The "scope for the analysis is if the alternatives" was limited to the site authorized in the PSC CPCN. Had it not been so limited, the applicants would have been required to analyze numerous alternatives that might not meet the PSC's complex siting approval criteria.[4] As it

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[3] *See*: NR 299.03(2) & *Bersani v. USEPA*, 850 F.2d 36 (2nd Cir. 1988) *See* Also: Ruling Limiting Issues, 7/2/04, pp. 9-15) The Division denied motions by both Wisconsin Electric and S. C. Johnson to find the PAA either sufficient or inadequate as a matter of law.

[4] As previously noted, under the current regulatory scheme, the DNR would be required to limit the PAA as it has in this case. Wis. Stat. § 30.025. The parties agreed that this statute does not apply to this application. While the new statute does not provide a legal authority for the Department's actions in this case, it does reinforce the reasonableness of the DNR's exercise of its discretion under the then-existing regulatory process. The Department's

was, the Department had already received enough information to evaluate all of the other sites sufficiently for the PSC to consider the likely impact on wetlands for purposes of its review in conjunction with the CPCN.

As Wisconsin Electric argues, the limitation of the PAA focused the DNR's regulatory oversight to two critical stages in the CPCN process. First, before the PSC made its site selection, the DNR reviewed the wetland delineation and site plans for each of the four sites under consideration by the PSC. To this extent, the DNR did consider "alternative locations" as part of its review of the project proposal even if not specifically as part of the PAA. Second, after the PSC decision Department staff met with Wisconsin Electric to modify the proposal to reduce detrimental impacts to wetlands to the extent possible. "This approach assured that the PSC would have the benefit of the DNR's assessment of the wetland sites when the PSC made its site selection decision, and that DNR would work with Wisconsin Electric to assure that the wetland impacts would be avoided and minimized to the extent practicable after a site was selected by PSC." (WE, brief p. 21) This was a reasonable exercise of its regulatory authority under Wis. Admin. Code NR 103 and NR 299.

Hopkins offered two essential reasons for the DNR's approach to the PAA in this matter. First, the Department did not believe it was appropriate to require a full PAA for each site being considered by the PSC in the context of its review of the CPCN. (Hopkins, TR p. 570) Second, the DNR agreed to essentially defer to the PSC as to what constituted available alternatives because the PSC has a more comprehensive set of factors to consider when reviewing the siting of a power plant facility. (Id.)

For example, as part of the CPCN process, the PSC specifically considered the Development Agreement and the conditional Use Permit that had been negotiated between the City of Oak Creek and Wisconsin Electric. (Haskin, TR pp. 7-8). Consideration of local land use and development plans and environmental values are required elements of the PSC review. *See,* Wis. Stat. § 196.491(3)(d). No other site had any comparable local approval or comparable local controls. It is also significant that no other alternative site would avoid detrimental impacts to wetlands.[5] Given the extensive review of multiple factors considered by the PSC, and the fact this was the only site in which local approvals were in place, it was a reasonable exercise of discretion to limit the PAA review. The Division finds that the DNR properly exercised its regulatory discretion in limiting the PAA.[6]

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action was not arbitrary or capricious but based upon a reasonable exercise of its discretion under NR 103. (Hopkins, p. 575)

[5] While the record does not provide a sufficient basis to conclude that the Caledonia alternative site was a "practicable alternative", it is clear that construction at that site would also result in detrimental impacts to wetlands, although perhaps wetlands of lower quality. (*See*: TR pp. 859-860)

[6] With respect to the PAA, it should also be noted that the USACOE has not completed its review of the wetland fill associated with this project. Approval by the USACOE is required before the WQC can take effect. (Permit Condition #4) The USACOE review includes a related PAA review that may be wider in scope than the DNR's NR 103 analysis. (Ex. 210; TR p. 624)) The USACOE process also provides for mitigation of wetland impacts and the applicant has submitted preliminary mitigation plans to the USACOE. (TR p. 148-150) Such a mitigation

The purpose of NR 103 is to set forth the conditions necessary to protect water quality related functions and values of wetlands. (NR 103.03(1)) Greg Kasel, an engineering supervisor for the Bechtel Corporation, testified that Wisconsin Electric configured the project on the north side CUP to avoid and minimize detrimental impacts to wetland functional values to the extent practicable. (TR pp. 292-300) This was borne out in the testimony of Dr. Reed, a distinguished wetland scientist employed by SEWRPC. Reed noted that an earlier iteration of the project threatened a plant community (PCA No. 1) with a high floral quality index, but that this was not the case in the latest project design as set forth in Ex. 28. (TR pp. 858-875) The DNR Area Water Management Specialist, Heidi Hopkins, testified that Water Quality Certification should issue because the project proponents had taken all practicable measures to minimize adverse impacts to the functional values of affected wetlands. (TR. pp. 598-605)

The primary opponents of these permits provided almost no testimony on wetland functions and values, focusing instead on the PAA issue. S. C. Johnson's primary witness on wetland issues, Scott Norwood, admitted that he had no training in any wetland sciences, had never delineated a wetland, had never prepared a practicable alternative analysis and had not even visited the site. (Norwood, TR pp. 1010-1011) There is surprisingly little evidence in the record relating to direct detrimental impacts on the functional values of affected wetlands. The record is more extensive as it relates to likely secondary impacts to wetland areas which are not filled as a result of this project.

The Sierra Club, relying on the testimony of Dr. Reed, argues persuasively that the DNR has not sufficiently analyzed and regulated potential secondary detrimental impacts to wetlands that are not filled in conjunction with this project. (Sierra Club, Brief p. 3) The Division has added a condition to the water quality certification that requires that the applicant submit a plan acceptable to the DNR to reduce such secondary impacts. Specifically, the plan should include further details relating to reducing sedimentation, pro-active prevention of invasion by exotic plant species, and a plan to maintain the existing hydrology and habitat values to the extent practicable in remaining wetland areas. To the extent reasonable, buffer areas directly contiguous to remaining wetlands should also be preserved. The Division is aware that the Department has already required an extensive erosion control plan and other permit conditions relating to reducing sedimentation during construction. However, the plan to reduce secondary impacts will go beyond these construction requirements to "protect, preserve and enhance" other functional values in remaining wetland areas.[7]

Dr. Reed concluded that loss of the 23.47 acres of wetland would have a detrimental cumulative impact on wetland functional values. (TR p. 879) This testimony was the closest the objectors came to countering the testimony of the Department that the project could be approved despite the loss of wetlands. Some relatively high quality wetlands will be filled during

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requirement is not available under Wisconsin law for projects that impact wetlands along Lake Michigan. (TR p. 611)

[7] It should be noted that WE has a very capable wetland scientist on staff, a former DNR Water Management Specialist, and that this provision is not unduly burdensome.

construction of the ERGS Bowl and the related destruction of the bluff along Lake Michigan. (Kasel, TR p. 295) The "bowl" is necessary to construct the ERGS units at lake level to install an "open cycle cooling system". (*Id.*) The highest quality wetland in this area, R 22 B, will lose 2.3 acres and preserve 1.3 acres of wetland. (Reed, TR p. 884) As Dr. Reed testified, it is unlikely that any future mitigation efforts will create wetlands with the same level of functional values. (Reed, TR pp. 884-885) However, the record does not support denying Water Quality Certification solely on the basis of detrimental cumulative impacts resulting from "similar activities" in the affected area. It is unlikely that there will be many "similar activities" in the affected area. Large coal-fired electricity generating plants are quite rare, as the CPCN makes clear. Further, the applicants and the DNR have done a commendable job in reducing wetland impacts to a minimum. The initial proposal involved a plan to fill up to 60 acres of Lake Michigan lakebed and adjacent wetland areas. (TR p. 578) Many of the most valuable wetland areas have been preserved, and should continue to function at a high-value under the required plan to minimize secondary impacts.[3]

Section 30.21 Issues

The second issue is whether the applicant has demonstrated compliance with Wis. Stat. § 30.21. The central issue in this context relates to the definition of a "public utility" under the statute in light of complex financing and lease arrangements. The Division finds that the financing/lease arrangements do not bar the applicant from being treated as a "public utility" under Wis. Stat. § 30.21.

Wis. Stat. § 30.21 authorizes a public utility to "construct, maintain and operate" certain structures "upon and under" the bed of a Great Lake. There is no dispute that Wisconsin Electric is a public utility. (TR p. 1006) Further, there is also no dispute that it is Wisconsin Electric that will "maintain and operate" the ERGS. (TR p. 1006) As Wisconsin Electric argues, the dispute is over a legal issue: "under the lease transactions between Wisconsin Electric and ERGS, LLC, is Wisconsin Electric "constructing" ERGS for the purposes of Wis. Stat. § 30.21?"

The Wisconsin Electric Assistant Treasurer, James Schubilske, testified that the nominal owner of the ERGS units will be ERGS, LLC. (TR p.192) ERGS, LLC is obligated to construct the ERGS units for the benefit of Wisconsin Electric under the express terms of the 30-year lease agreement. (*Id.*) This approach was authorized under recent legislation, Wis. Stat. § 196.52(9) (the "Leased Generation Law") which permits a public utility to build generating resources through an affiliate that finances the construction. (*Id*) Under the structure, ERGS, LLC is solely a vehicle to finance the ERGS units. (*Id.*)

Section 30.21 does not require Wisconsin Electric to "own" the structures being built on the lakebed. Rather, it requires Wisconsin Electric to "construct" those facilities. Obviously, it will seldom, if ever, be the case that a public utility itself will physically construct the type of structures authorized by § 30.21. Typically, such construction will be done by another entity

[3] While mitigation is imperfect and not specifically authorized for fills along Lake Michigan, a USACOE required plan to mitigate losses would lessen concerns related to cumulative impacts. However, while likely, no such plan has yet been formally developed by the applicant, or approved by the USACOE.

acting on behalf of the public utility. In any event, as Mr. Schubilske testified, " . . . in a real sense the utility for all intents and purposes gets all the benefits of ownership and the lease is strictly a financing mechanism they use. They have all the rights to the power, they have the rights of quiet enjoyment, they can use it as they wish. They are in fact, from an economic perspective, the owner of the facility." (TR p. 207)

More fundamentally, the state legislature recently passed the Leased Generation Law in part to provide an incentive to compensate investors for the risks associated with construction of new coal plants. (EIS, p. xix) The Leased Generation Law has been essentially authorized by various energy-related regulatory agencies, including both the WPSC and the FERC.[9] (TR p. 194; Ex. 1) It is simply not within the scope of the DNR review of this proposal to effectively strike down this funding mechanism that has been duly authorized by the legislature.

The Division finds that the applicant may not undertake construction until such time as it receives a permit to operate the water intake structure under the WPDES permitting process. As S. C. Johnson demonstrated, this result is mandated by the plain language of Wis. Stat. § 30.21. If a new or reissued WPDES operating permit is not granted for the intake structure, the applicant is not permitted to "operate" the structure and therefore it is not "necessary" to build it within the meaning of Wis. Stat. § 30.21. At hearing and in its brief the DNR modified its previous position and agreed with the objectors that a permit restriction preventing construction until issuance of the WPDES operating permit is appropriate and required by the plain language of Wis. Stat. § 30.21. (TR pp. 621-622; DNR brief)

WEPA Issues

The third issue relates to whether the WEPA process was sufficient and complete. The Division finds that the DNR has complied with the procedural requirements of WEPA. The Division's jurisdiction over the WEPA process is very limited. Many of the same issues raised by S. C. Johnson and the other objectors are currently being considered by a circuit court that properly has jurisdiction over these issues. For purposes of the decision of the Division, the DNR has met every procedural requirement of the WEPA process. WEPA is a procedural statute and does not impose substantive requirements beyond those imposed under substantive regulatory requirements. *Larsen v. Munz Corp.*, 167 Wis. 2d 583, 482 N.W. 2d 332 (1992)

S. C. Johnson and the Sierra Club argue that the state failed to comply with WEPA because it did not produce and release for public viewing and comment a supplement to the environmental impact statement. This issue arises out of the post-environmental impact statement changes made by the Wisconsin Electric to the design and operation of the intake system. Specifically, the changes identified by S. C. Johnson and the Sierra Club are 1) replacing the timber cribs with wedge-wire screens, which changes the footprint on the lakebed from approximately 0.5 acres to 1.3 acres, 2) the alleged addition of copper to Lake Michigan and 3) the periodic operation of the existing intake as a back-up.

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[9] The FERC decision specifically found that a Project Company similar to ERGS is not the owner of such a facility, but " . . . acts as a passive investor and the utility, which will operate and maintain the plant, remains a regulated entity subject to FERC jurisdiction." (TR p. 194)

The cooling water intake system is discussed at pages 203 to 208. As the DNR argues in its brief, "the first three sections are labeled Description and location of proposed water intake system, Construction methods for the water intake transport system, and Potential impacts of construction of the water intake system. Almost all of what appears there remains accurate today. (DNR response brief, p. 11)

Most of the changes are minor, and certainly nothing close to a procedural deficiency – reductions on the length and diameter of the pipes and tunnel system. The only significant change relates to the change to include wedge-wire screens rather than timber cribs as part of the cooling water intake design. The objectors make much of this change, but it does not rise to the level of a procedural defect for the EIS. The substance of the design change will be addressed in the WPDES permitting process. The EIS itself made it clear that the public should expect specific design changes to occur in conjunction with the WPDES permitting. (EIS, p. 204)

There is simply no basis to conclude that the EIS was procedurally defective.

CONCLUSIONS OF LAW

1. The Division of Hearings and Appeals has authority under Wis. Stat. §§ 30.12, 30.21, 30.123, 30.20 30.19 and 227.43(1)(b) and in accordance with the foregoing Findings of Fact, to issue the permits for the construction and maintenance of the project described above subject to the conditions specified.

2. The ERGS project, as proposed by Wisconsin Electric, will comply with all applicable requirements of Wis. Stat. §§ 30.02, 30.03, 30.12, 30.123, 30.19, 30.20, 30.21, 182.017, 281.15, 281.36 and 281.37 and Wis. Admin. Code Chapters NR 102, 103, 115, 116, 117, 170, 216, 299, 320 and 347 to (1) place fill on the bed of Lake Michigan for the purpose of dock extension, for the placement of an intake and discharge structure and to stabilize the shoreline, (2) remove materials from the bed of Lake Michigan, (3) place bridges and culverts over or in navigable tributaries to Lake Michigan and remove materials from the bed of those tributaries for the purposes of railroad expansion and road construction, (4) grade more than 10,000 square feet and to construct ponds within 500 feet of a navigable waterway in Racine County and (5) impact wetlands with discharge and/or fill.

3. The applicant is a riparian owner within the meaning of Wis. Stat. § 30.12.

4. The proposed facilities described in the Findings of Fact constitute structures within the meaning of Wis. Stat. § 30.12.

5. The ERGS project as proposed by Wisconsin Electric will comply with all applicable requirements of Wis. Stat. § 30.20 with respect to dredging for activities on the bed of Lake Michigan.

6. The Department has authority to limit "the scope for an analysis of alternatives and the potential for compliance with NR 103". § NR 103.08(1) The DNR properly exercised this regulatory discretion in its review of the PAA in this matter.

7. The Practicable Alternatives Analysis satisfies the requirements of Wis. Admin. Code NR 103. Practicable alternatives must be "available and capable of being implemented taking into consideration cost, available technology and logistics in light of overall project purposes." Wis. Admin. Code NR 103.07(2). The Division ruled previously that the "overall project purpose" is the construction of coal-fired generating stations to produce electricity. No practicable alternatives to the North Site-CUP site that will avoid and minimize adverse impacts to wetlands are "available" or "capable of being implemented."

8. The wetlands described above are designated as wetlands in an area of special natural resource interest under NR 103.04(2), because they have a hydrologic connection to Lake Michigan. This factor was considered by the Department and the Division and is a basis for the requirement for the plan to minimize secondary wetland impacts.

9. The condition requiring a plan to minimize potential secondary impacts on wetland functional values is reasonable and necessary to meet the requirements of NR 103.08(3)(d-f).

10. The Department and the Division have considered all of the factors listed under NR 103.08(3), in connection with review of the WQC. The proposed project meets the standards found in NR 103 and NR 299 and issuance of Water Quality Certification is appropriate.

11. The permit as modified meets the requirements of NR 103 and NR 299.

12. The ERGS project meets the definition of a "public utility" within the meaning of Wis. Stat. § 30.21. No construction of the intake structure shall be undertaken until a WPDES "operation" permit is issued or reissued. (*Id.*)

13. The Department and the PSC prepared a joint Environmental Impact Statement (EIS) in connection with review of the project. The DNR has met the procedural requirements of Wis. Stat. § 1.11 and NR 150.

PERMIT

Wisconsin Electric Power Company is hereby granted under Wis. Stat. §§ 182.017, 30.02, 30.03, 30.12, 30.123, 30.19, 30.20, 30.21, 281.15, 281.36, 281.37 and Wis. Admin. Code chs. NR 102, 103, 115, 116, 117, 150, 216, 299, 320, 347, a permit to 1) place fill on the bed of Lake Michigan for the purposes of dock extension, for the placement of an intake and discharge structure and to stabilize the shoreline 2) to dredge materials from the bed of Lake Michigan 3) to place bridges and culverts over or in navigable tributaries to Lake Michigan and dredge materials from the bed of those tributaries for the purposes of railroad expansion and road construction 4) to grade more than 10,000 square feet and to construct ponds within 500

feet of a navigable waterway in Racine County and 5) to impact wetlands under 401 Water Quality Certification, Wis. Stat. § 281.36 and Wis. Admin. Code chs. NR 103 and 299 as a result of power plant expansion, road construction and railroad improvements.

The project is located in the City of Oak Creek, Milwaukee County and the Town of Caledonia, Racine County also described as being a part of Section 1, T4N, R22E, all of Section 6, T4N, R23 E, part of Section 35, T5N, R22E, all of Section 36, T5N, R22E, part of Section 31, T5N, R23E, part of Section 12, T4N, R22E, and part of Section 7, T4N, R23E subject to the following conditions:

1. You must notify the Department of Natural Resources (Department) Point of Contact at phone 262-884-2355 before starting constructing on each of the five phases of the project as identified in the introductory paragraph above and again not more than 5 days after each phase of the project is complete.

2. You must complete the project as described on or before December 31, 2011. If you will not complete the project by this date, you must submit a written request for an extension prior to the expiration date of the permit. Your request must identify the requested extension date and the reason for the extension. A permit extension may be granted, for good cause, by the Department. You may not begin or continue construction after the original permit expiration date unless the Department grants a new permit or permit extension in writing.

3. You are not authorized to do any work other than what is specifically described in the application packages and associated plans which were submitted to the Department on June 30, 2003, December 19, 2003 and February 9, 2004, and as modified by Exhibit 28 (GKK-6) and the conditions of this permit. These final Department approved plans and accompanying documents, as well as plans developed and approved pursuant to conditions of this permit are a part of and are conditions of this permit. If you wish to alter the project or permit conditions, you must first obtain written approval of the Department.

4. You are responsible for obtaining any permit or approval that may be required for your project by local zoning ordinances and by the U.S. Army Corps of Engineers before starting your project.

5. Upon reasonable notice, you shall allow access to your project site during reasonable hours to any Department employee or a Department monitor who is investigating the project's construction, operation, maintenance or permit compliance.

6. The Department may modify or revoke this permit if the project is not completed according to the terms of the permit, or if the Department determines the activity is detrimental to the public interest.

7. You must post a copy of this permit at a conspicuous location on the project web site for at least five days prior to construction, and remaining at least five days after construction. You must also keep a copy of the permit and approved plan available at the project site at all times until the project is complete. All employees, consultants and contractors who are working on the

project must be made aware of the permit and its conditions and all appropriate managers and supervisors in charge of or working on construction or compliance must be provided with copies of the permit.

8. Your acceptance of this permit and efforts to begin work on this project signify that you have read, understood and agreed to follow all conditions of this permit.

9. You, your agent, and any involved contractors or consultants may be considered a party to the violation pursuant to Wis. Stat. § 30.292, for any violations of Wis. Stat. ch. 30 or this permit.

10. You and/or your contractor shall provide financial assurance mechanisms related to the performance of construction requirements of this permit. The assurance mechanism will be in an amount and form satisfactory to the Department.

11. You shall establish and implement an Environmental Compliance Monitor (ECM). This shall be an independent firm or individual, which will monitor the overall environmental compliance of the project during every phase of the construction. The ECM shall work under the direction of the Department.

12. You must submit to the Department, through the ECM(s), clear photographs once a month documenting the progress of the wetland disturbance, lakebed fill, railroad construction, bluff excavation and overall stabilization efforts.

13. Nothing in the ECM procedures or in the financial assurances mechanism(s) substitutes for or restricts the Department's statutory authority to enforce its permits or Wisconsin Laws and environmental regulations, including its authority to require the cessation of unlawful activities causing environmental harm.

14. To avoid disruption to the stocking and spawning of fish species in Lake Michigan construction on the lakebed shall not occur between March 1st and July 1st with the following exceptions: a) construction of the intake screen system; b) construction within the existing intake channel; and c) construction of the dock extension after placement of the outside containment dike.

15. To avoid disruption to spawning fish species and avoid seasonally high water levels in the navigable waterways located within the project boundaries, construction of road and railroad crossings shall not occur between April 1st and June 1st.

16. A Project Implementation Plan (PIP) shall be submitted to the Department at least 14 days prior to beginning construction on any activity regulated under this permit. Each PIP shall contain the following information:

a) Written summary of the project methods, staging and timing.
b) Two copies of the updated construction plans.
c) Construction materials – type of equipment and materials to be used.

d) Erosion Control & Turbidity Control Plans. The plans must include:
- Timing of Vegetation Removal
- Type of best management practice or BMPs utilized during this phase
- Location and timing of BMP placement
- How often and who will maintain BMPs
- Timing for final stabilization
- Emergency Action Plan- What is the procedure if something fails?

e) Location of dewatering and disposal areas for dredged or stockpiled materials.

f) Contact information for this phase of the project

General Erosion Control- Applicable to all construction activities.

17. Construction shall be accomplished in such a manner as to minimize erosion and siltation into surface waters and as specified in the plans and procedures that are part of or approved pursuant to this permit. All erosion control measures must meet or exceed the approved Stormwater Construction Technical Standards found on the Department's Runoff Management Website http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Construction developed by the Department under Wis. Admin. Code chs. NR 151.31.

18. You must maintain a log of the erosion control inspections, repairs made and rain events. This must be kept on site and made available to Department personnel upon request.

19. You must follow field protocols for activities in proximity to landfills or areas known to contain contaminated material and any solid waste encountered shall be disposed of in accordance with Wis. Admin. Code ch. NR 500 or as required by any authorizations issued by the Department.

20. The removal of vegetation shall be restricted to the areas proposed for construction. Vegetation removal shall be staged so that the existing vegetative cover is not removed earlier than 48 hours before grading work is scheduled to commence for that phase of the construction. If the duration of the vegetation removal is longer than 48 hours, grading work shall begin within 48 hours after vegetation removal is completed for that phase. Except for removal of material from the bluff that is necessary to construct the powerblock sediment basin, excavation of the bluff shall take place after the powerblock sediment basin is constructed. Temporary sediment control measures shall be installed to protect against erosion until the powerblock sediment basin is completed.

21. The construction of the 3 largest stockpiles shall be staged as described in this condition. Specifically, these stockpiles are located on the Oak Creek North Landfill, the Oak Creek South Landfill and the former Spang parcel just north of 7-mile road. The Oak Creek North Landfill and the Oak Creek South Landfill will be stripped of topsoil as needed and that topsoil will be stockpiled on those sites. Fill excavated from the bluff will then be placed on these sites to reach the grade shown on the rough grading plans submitted as part of the application. When those elevations are reached, finish work will begin on these two sites to

create the parking and laydown areas necessary. At that time, fill excavated from the bluff will then be placed on the former Spang parcel just north of 7-mile road. All stockpiles and the stockpile side slopes shall be stabilized within 7 days of reaching final grade per the Surfacing plan developed by Bechtel for this project. If the stockpiles or stockpile side slopes will be left inactive for more than 30 days you shall implement methods to temporarily stabilize the stockpiles per the technical standards developed by the Department or per the Surfacing plan developed by Bechtel for this project.

22. Site stabilization between October 1st and April 15th requires sodding or seeding and mulching with a non-toxic tackifier.

23. This permit has been issued with the understanding that any construction equipment used is the right size to do the job, and can be brought to and removed from the project site without unreasonable harm to vegetative cover or fish and wildlife habitat.

24. Unless otherwise specified in this permit or approved pursuant to this permit, erosion control measures must be in place and operational at the end of each working day. All erosion control measures shall be inspected and any necessary repairs or maintenance performed after every rainfall exceeding ½ inch and at least once per week.

25. You must not deposit or store any of the dredged or graded material in any wetland, below the ordinary high water mark, or in the floodplain of any waterway unless specifically authorized by this permit or within the approved plans.

26. Other than site stabilization and erosion control activities, construction activities within navigable (inland) waterways shall be conducted during low flow periods and shall not be conducted during precipitation events exceeding ½ inch, or when excessive precipitation is anticipated within 12 hours. Construction activities on Lake Michigan shall not be conducted when weather conditions are severe and constant enough to cause wave overtopping of erosion controls that could cause a significant release of sediment to the Lake environment.

27. Any area disturbed during construction that is at the final grade or will be left inactive for a period greater than 30 days shall be stabilized within 7 days of the end of the land disturbing activities.

28. Areas where soil is exposed must be protected from erosion by seeding and mulching, sodding, diversion of surface runoff, installation of hay bales or silt screens, construction of settling basins, or similar methods as soon as possible after the removal of the original ground cover as described in the site specific erosion control plan approved by the Department or in the Stormwater Construction Technical Standards found on the Department's Runoff Management Website http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Construction developed by the Department under Wis. Admin. Code chs. NR 151.31.

29. Final site stabilization requires the re-establishment of vegetation and should not contain any plant species listed as invasive by the Department. A listing of what the Department

considers invasive species can be found on the Department's website http://dnr.wi.gov/org/caer/ce/invasives/

30. All construction work shall take place from either a barge, a temporary staging platform, or from an upland location. Construction equipment must not be operated on the bed (below the ordinary high water mark) of any navigable waterway.

Dewatering Activities- for all dewatering activities such as the removal of groundwater, surface water or the dewatering of dredged materials within work areas or other similar circumstances, in addition to the conditions listed above.

31. Any water pumped from pits, trenches or ponds shall be treated using a BMP found in the technical standards developed by the Department. The type of Dewatering Practice utilized at this site shall be a suitable practice listed for "Fine to Very Fine Particles" in the Dewatering Practice Selection Matrix found in the Dewatering Technical Standard. The Dewatering technical standard is found in the Stormwater Construction Technical Standards found on the Department's Runoff Management Website http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Construction developed by the Department under Wis. Admin. Code chs. NR 151.31.

32. If at any time you notice the accumulation of sediment into a wetland or waterway as a result of dewatering, or if water pumped from pits, trenches or ponds begins to discharge excess amounts of sediment to a wetland or waterway you shall immediately stop dewatering and contact the Department to determine an adequate dewatering method.

33. During bluff excavation, if at any time the bluff drainage system is undersized or incapable of capturing surface or groundwater discharges within the excavation footprint, you shall immediately stop excavation work and develop and implement a plan, which provides for an adequate dewatering system.

Water Diversion- during railroad expansion and all road crossings, in addition to the conditions listed above.

34. While constructing all road crossings and during railroad modifications, you shall submit to the Department for review and approval a plan showing the specific means and methods proposed for the diversion of the waterway flows around the work site. This plan may be submitted in conjunction with the PIP plan for that phase of the construction.

Dredging- for the navigational channel, discharge structure, intake structure and other incidental dredging, in addition to the conditions listed above.

35. Bottom materials must be removed with equipment and practices designed to minimize the amount of sediment that can escape into the water. If available a covered clam shell bucket shall be utilized during dredging operations. If a covered clam shell bucket cannot be utilized for dredging, for construction of the discharge structure and navigational channel, a silt

curtain must be installed in the lake isolating the proposed dredged area from the remainder of the lake.

36. All of the material dredged for the navigational dredging and dock expansion shall be disposed of at a Department approved landfill unless an exemption is authorized by the Department for stockpiling and beneficial reuse. Dredged materials from the discharge structure and intake structure may be placed in one of the proposed stockpiles but may not be placed in any waterway or wetland and may not be placed in the floodway of any waterway.

37. You may only dredge to the dimensions and depths as described in your permit application. Removal must not exceed 160,000 cubic yards.

38. This permit allows for the maintenance of the navigational channel at the dimensions and depths approved under this permit for a period of five years. After this period of time, you should obtain a § 30.20 dredging permit for future maintenance dredging for a period not to exceed five years. At least 5 days prior to conducting any maintenance dredging you must notify the Department of your intent to dredge.

39. You may only remove sediments within the intake channel (which is the lakebed between the south coal dock seawall and the jetty to the south, including the half circle created by the breakwall angling to the south) and may only remove sediments within these dimensions and to this bottom elevation: the bottom elevation from the Oak Creek Power Plant intake structure to the mouth of the intake channel will be maintained to an elevation of –22 low water datum, and from the mouth of the intake channel to the point of intercept it will be maintained to –18 low water datum. This is shown on Bechtel drawing 24896-000-CT-7303-00002, titled "Backup Surface Water Intake Plan". During maintenance dredging operations you must follow all of the erosion control, dewatering and dredging conditions listed in this permit. You must notify the Department at least 14 days prior to conducting any maintenance dredging. At this time you must provide the Department with the following information:

- Total Cubic Yards to be dredged
- When the dredging will take place
- Location of where the dredging will occur
- Location of where the dredge spoil will be placed.

Lake Michigan Structures- for the expansion of the dock, the discharge structure, shoreline protection and the intake structure, in addition to the conditions listed above.

40. All structures placed for the construction of dock expansion, the discharge structure, the shoreline protection and the intake structure shall be placed according to the plans approved by the Department. All material shall be appropriately sized or protected to withstand wave action and ice formation and other environmental factors common to Lake Michigan.

41. All fill materials utilized during construction of these structures shall not consist of material which is considered solid waste under Wis. Admin. Code ch. NR 500.

42. You shall regularly inspect the dock, intake structure, discharge structure and shoreline protection for accumulation of debris and structural stability. You shall remove any excessive accumulation of debris and shall maintain all structures per the approved plans.

43. You shall not construct, maintain or operate the new intake structure or the new discharge structure until the Department issues a new or reissued Wisconsin Pollutant Discharge Elimination System permit for the intake structure and discharge.

44. You shall follow all US Coast Guard requirements for informational, regulatory or warning buoys or navigational requirements during and after construction.

45. All facilities and materials located on the dock shall be for the purposes of handling and processing materials, which are delivered or transported, via Lake Michigan.

45a. In accordance with Wis. Stat. § 30.21, this approval is for the Wisconsin Electric Power Company's construction, operation and maintenance of the Elm Road Generating Station. If the land use changes to other than a public utility, the use of the lakebed for private purposes is not authorized under the approval.

Road and Railroad Crossings of Navigable Waterways- for railroad expansion, construction access roads and new or modifications to plant access roads, in addition to the conditions listed above.

46. All road and railroad crossings shall be installed in a manner, which does not impede the passage of fish and wildlife. All temporary culverts will be sized so as to ensure that during the 100-year flood event there will be no backwatering on properties not owned by Wisconsin Electric Power Company. All culverts shall be installed according to the plans submitted as part of the application, with the following exceptions:

a. The culvert at navigable stream #1, as identified on the Department's January 15, 2003 navigability determination, shall be buried between 12 and 18 inches below the existing bed elevation of the waterway;

b. The culvert at navigable stream #3, as identified on the Department's January 15, 2003 navigability determination, may be required by DNR to be buried between 12 and 18 inches below the existing bed elevation of the waterway; within 30 days of this Order, the DNR shall evaluate that culvert and advise Wisconsin Electric if the culvert must be buried.

47. You shall stage the proposed crossings so that no more than 2 crossings in a single drainage basin are being installed at any one time.

48. You must inspect bridge/culvert openings periodically for debris and within 5 days of any rainfall exceeding ½ inch, and you must remove any restriction of flow. Any debris removed from the openings must be deposited in an upland site and out of any floodplain.

49. You assume all responsibility and liability for direct or indirect damage caused or resulting from the presence of the waterway crossings and hold the State of Wisconsin and its employees harmless.

50. The temporary roads shall be removed prior to completion of the project. After the temporary roads are removed the bed and banks of the waterways and any areas disturbed by the temporary crossing shall be restored to pre-construction topographic elevations and flow regimes, unless otherwise authorized by the Department.

Wetland and Environmental Corridor Impacts- specific conditions in Addition to the general conditions above.

51. No wetlands or environmental corridors may be disturbed other than where specifically authorized in the plans approved by the Department. In areas where you will be working within or adjacent to wetlands or environmental corridors, you shall install silt fence and snow fence along the construction boundaries to prevent accidental disturbance to areas outside of the construction boundaries.

52. Prior to undertaking any construction, you shall submit a plan acceptable to the Department to minimize secondary detrimental impacts to wetland areas on the subject parcel. This plan shall include but not be limited to reducing siltation and sedimentation, preventing invasive exotic species from entering into wetland areas, and maintaining the existing hydrology and habitat values to the extent practicable during construction and operation of the proposed facilities. You shall take all reasonable steps to preserve valuable habitat in areas directly contiguous to remaining wetlands. Special care should be taken to preserve state-threatened species in remaining wetland areas and directly contiguous upland areas.

53. Construction site runoff and stormwater runoff shall be treated by an approved BMP for the removal of pollutants prior to discharge to any waterway or wetland.

Dated at Madison, Wisconsin on November 22, 2004.

STATE OF WISCONSIN
DIVISION OF HEARINGS AND APPEALS
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By: Jeffrey D. Boldt
Jeffrey D. Boldt
Administrative Law Judge

NOTICE

Set out below is a list of alternative methods available to persons who may desire to obtain review of the attached decision of the Administrative Law Judge. This notice is provided to insure compliance with Wis. Stat. § 227.48 and sets out the rights of any party to this proceeding to petition for rehearing and administrative or judicial review of an adverse decision.

1. Any party to this proceeding adversely affected by the decision attached hereto has the right within twenty (20) days after entry of the decision, to petition the secretary of the Department of Natural Resources for review of the decision as provided by Wisconsin Administrative Code NR 2.20. A petition for review under this section is not a prerequisite for judicial review under Wis. Stat. §§ 227.52 and 227.53.

2. Any person aggrieved by the attached order may within twenty (20) days after service of such order or decision file with the Department of Natural Resources a written petition for rehearing pursuant to Wis. Stat. § 227.49. Rehearing may only be granted for those reasons set out in Wis. Stat. § 227.49(3). A petition under this section is not a prerequisite for judicial review under Wis. Stat. §§ 227.52 and 227.53.

3. Any person aggrieved by the attached decision which adversely affects the substantial interests of such person by action or inaction, affirmative or negative in form is entitled to judicial review by filing a petition therefor in accordance with the provisions of Wis. Stat. §§ 227.52 and 227.53. Said petition must be filed within thirty (30) days after service of the agency decision sought to be reviewed. If a rehearing is requested as noted in paragraph (2) above, any party seeking judicial review shall serve and file a petition for review within thirty (30) days after service of the order disposing of the rehearing application or within thirty (30) days after final disposition by operation of law. Since the decision of the Administrative Law Judge in the attached order is by law a decision of the Department of Natural Resources, any petition for judicial review shall name the Department of Natural Resources as the respondent. Persons desiring to file for judicial review are advised to closely examine all provisions of Wis. Stat. §§ 227.52 and 227.53, to insure strict compliance with all its requirements.

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